

SOLAR FINANCING IN NORTH CAROLINA: THE UNTAPPED POTENTIAL OF POWER PURCHASE AGREEMENTS

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Clean, renewable energy is an essential component of a modern energy policy. Rooftop solar photovoltaic systems constitute an important part of a state's clean energy portfolio. But these systems are too expensive for most individuals and small businesses to buy outright. Instead, they must be financed. One of the main methods used in other states for financing rooftop solar PV systems is the power purchase agreement. Under a typical power purchase agreement, a third-party financier installs a solar PV system on a property owner's rooftop and sells the electricity generated by the system to the property owner. The price for the electricity is usually lower than the price charged by the property owner's public utility. But the North Carolina Utilities Commission has prohibited the use of power purchase agreements in North Carolina. According to the Utilities Commission, the sale of electricity by a third-party financier under a power purchase agreement violates the competitive monopoly granted under state law to the public utility.

This prohibition against power purchase agreements will slow the spread of rooftop solar PV systems in North Carolina. In addition to the detrimental environmental effects this will have, there are also equitable effects. Without power purchase agreements, only the wealthy are able to afford the economic benefits and environmental stewardship resulting from solar ownership.

This Article contends that power purchase agreements do not implicate the traditional justifications for regulation by the Utilities Commission and are therefore outside the Commission's authority to prohibit. The Article also offers both a legislative and a judicial solution to the current prohibition against power purchase agreements in North Carolina.

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** Associate Professor, Elon University School of Law. This article is dedicated to my friend and colleague, Michael L. Rich, whose innovative and humorous spirit continues to inspire those who had the privilege of working with him.

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INTRODUCTION

In December 2014, Faith Community Church, a historically African-American church located in Greensboro, North Carolina, entered into an agreement with the North Carolina Waste Reduction and Awareness Network (“NC WARN”), a non-profit, environmental organization.¹ The agreement called for NC WARN to install a solar photovoltaic (“PV”) system on the roof of the church.² According to the terms of the agreement, known as a “power purchase agreement” (“PPA”), NC WARN would pay the significant upfront cost of the solar PV system and would sell the electricity produced to the church at a reduced rate compared to the rate charged by the church’s public utility, Duke Energy Carolinas (“Duke Energy”).³ Without this arrangement, the church would not have been able

1. See N.C. Waste Awareness and Reduction Network, SP-100, SUB 31, at 1, 18, (N.C. Utils. Comm’n June 17, 2015) (Request for Declaratory Ruling).

2. *Id.* at 1.

3. *Id.* at 1–2. The PPA between Faith Community Church and NC WARN called for NC WARN to sell to the church electricity produced by the PV system at a rate of \$0.05 per kilowatt

to afford the high cost of purchasing and installing the solar panels on its own.⁴ The arrangement would lower the church's electricity expenses and better allow it to meet its mission of "striving to be good stewards of God's earth."⁵ In turn, the stream of payments would enable NC WARN to replicate this type of arrangement with other churches, supporting its goal of reducing carbon output and slowing climate change.⁶ The power purchase agreement benefited both parties.

In April 2016, however, the North Carolina Utilities Commission struck down the arrangement and ordered NC WARN to pay a fine of "\$200 per day for each day that NC WARN has provided and continues to provide electric service to the Church."⁷ Despite the fact that at the time of the Utilities Commission's decision NC WARN had entered into only one, specially-negotiated power purchase agreement (the one with Faith Community Church), the Utilities Commission found that the sale of electricity by NC WARN to the church under the PPA rendered NC WARN a "public utility" under North Carolina law.⁸ As a public utility,

hour ("kWh"). N.C. Waste Awareness and Reduction Network, SP-100, SUB 31, at 1 n.1 2016 WL 1572367, at *1 n.1 (N.C. Utils. Comm'n Apr. 15, 2016) (Order Issuing Declaratory Ruling). This is approximately half the price of electricity sold by Duke Energy. See DUKE ENERGY PROGRESS, LLC, SMALL GENERAL SERVICE SCHEDULE, 1 https://www.duke-energy.com/_/media/pdfs/for-your-home/rates/electric-nc/g1neschedulesgsdep.pdf?la=en [https://perma.cc/VS5X-UQME].

4. Telephone Interview with Nelson Johnson, Reverend, Faith Community Church (Nov. 1, 2016). The inability to afford the full cost of a solar PV system up front is common. See STEFAN LINDER & MICHEL DI CAPUA, BLOOMBERG NEW ENERGY FIN., RE-IMAGINING US SOLAR FINANCING, 1 (June 4, 2012), <https://financere.nrel.gov/finance/content/re-imagining-us-solar-financing> [https://perma.cc/EAW7-W85Z] ("Few homeowners can afford the upfront cost of a solar system, giving rise to third-party financing models, which allow them to 'go solar' with little or no money down.").

5. See N.C. Waste Awareness and Reduction Network, SP-100, SUB 31, at 2, (N.C. Utils. Comm'n June 17, 2015) (Request for Declaratory Ruling). Attention to stewardship of natural resources has taken on increased importance in various faith traditions. See, e.g., POPE FRANCIS, LAUDATO SI' (2015), http://w2.vatican.va/content/dam/francesco/pdf/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si_en.pdf [https://perma.cc/3DAX-XGGS].

6. See N.C. Waste Awareness and Reduction Network, SP-100, SUB 31 at 2, (N.C. Utils. Comm'n June 17, 2015) (Request for Declaratory Ruling) ("Such a funding mechanism could potentially generate a revolving revenue stream and allow NC WARN to provide similar projects to other non-profits in the future."). NC WARN states its mission as "tackling the climate crisis – and other hazards posed by electricity generation – by watch-dogging Duke Energy practices and building people power for a swift North Carolina transition to clean, renewable and affordable power generation and increased energy efficiency." See *Mission*, NC WARN, <http://www.ncwarn.org/about-us/mission/> [https://perma.cc/WRB8-BEKL].

7. See N.C. Waste Awareness and Reduction Network, SP-100, SUB 31, at 31, 2016 WL 1572367, at *31. The Utilities Commission suspended the fine if the non-profit returned all payments with 10% interest to the church and donated the solar panels to the church. *Id.* at 32, 2016 WL 1572367, at *32.

8. *Id.* at 28–29, 2016 WL 1572367, at *28–29.

NC WARN was subject to regulation and oversight by the Utilities Commission. Moreover, by selling electricity from the solar PV system to the church, NC WARN had violated the exclusive franchise⁹ granted by the Utilities Commission to Duke Energy to sell electricity “to or for the public” in Greensboro.¹⁰ The Utilities Commission’s decision that NC WARN, and by extension any financing parties under future PPAs, was a public utility effectively foreclosed the use of power purchase agreements in North Carolina. The Utilities Commission’s decision is currently on appeal before the Court of Appeals of North Carolina.¹¹

In other states, PPAs constitute one of the primary means of financing on-site solar PV systems and have been used without detrimental effects to electric utilities or consumers. On-site solar PV systems are a key component of “distributed generation” systems, which produce electricity at or near the location where it is used, rather than at a centralized generation facility.¹² Distributed generation through the use of on-site (typically rooftop) solar PV systems is known as “distributed solar.”¹³ The decision to eliminate the use of PPAs in North Carolina will slow the spread of distributed solar in the state. This will have detrimental environmental and equitable effects. More distributed solar would allow for a reduction in the use of electricity produced by coal-fired power plants.¹⁴

9. North Carolina’s Public Utilities Act defines “franchise” as “the grant of authority by the [Utilities] Commission to any person to engage in business as a public utility, whether or not exclusive or shared with others or restricted as to terms and conditions and whether described by area or territory or not, and includes certificates, and all other forms of licenses or orders and decisions granting such authority.” N.C. GEN. STAT. § 62-3(11) (2015).

10. Duke’s exclusive franchise extends to several areas in North Carolina, including the state’s most populous urban centers. The exclusive franchise was assigned to Duke pursuant to the Territorial Assignment Act of 1965. See Territorial Assignment Act of 1965, ch. 287, 1965 N.C. Sess. Laws 328, 328–41 (codified at N.C. GEN. STAT. § 62-110.2 (relating to electric service outside the corporate limits of municipalities) and § 160A-331 et seq. (relating to electric service within the corporate limits of municipalities)); see also N.C. GEN. STAT. § 160A-334 (2015) (authorizing the North Carolina Utilities Commission to order a “secondary supplier” of electricity, such as NC WARN, to cease and desist in the provision of electricity to a consumer in a region assigned to a “primary supplier,” such as Duke Energy). As explained by the Court of Appeals of North Carolina, the purpose of the Territorial Assignment Act of 1965 was “to eliminate the ‘uneconomic duplication of transmission and distribution systems’ bred of unbridled competition between public utilities, electric membership corporations and municipalities by designating the various competitors’ rights.” Morgan v. Hertford, 70 N.C. App. 725, 727, 321 S.E.2d 170, 172 (1984) (quoting Domestic Elec. Serv., Inc. v. Rocky Mount, 285 N.C. 135, 203 S.E.2d 838 (1974)).

11. See N.C. Waste Awareness and Reduction Network, SP-100, SUB 31, at 1–7 (N.C. Utils. Comm’n May 16, 2016) (Notice of Appeal and Exceptions).

12. *Distributed Solar*, SOLAR ENERGY INDUS. ASS’N, <http://www.seia.org/policy/distributed-solar> [<https://perma.cc/EY7F-5GUC>].

13. *Id.*

14. Duke Energy currently operates seven coal-fired power plants in North Carolina: Allen Steam Station (Gaston County); Asheville Plant (Skyland, NC); Belews Creek Steam Station

This would, in turn, reduce carbon emissions and help to slow climate change. Additionally, a reduction on the reliance of electricity from coal-fired plants may help to avoid the type of environmental disaster experienced by residents of Stokes County in February 2014, when 39,000 tons of coal ash from Duke Energy's Dan River Steam Station spilled into the Dan River.¹⁵

In addition, because the North Carolina statutes allow an exclusion from the definition of "public utility" for consumers who can afford to self-finance their on-site solar PV systems,¹⁶ prohibiting PPAs prevents only those who lack the means to self-finance PV systems from enjoying the economic and environmental stewardship benefits of solar-generated electricity. By prohibiting PPAs in North Carolina, environmental stewardship and lower-cost, clean electricity have been limited to the "haves" and kept beyond the reach of the "have-nots."

This article examines the practical, legal, and policy issues involved in financing on-site solar PV systems through power purchase agreements. Part I starts by giving a brief overview of the economics of distributed solar production. Part II reviews the statutory and case law background as to what constitutes a "public utility" under North Carolina law. Part III then reviews the decision by the North Carolina Utilities Commission in *NC WARN* to prohibit PPAs, and Part IV examines how that decision is consistent with some and in tension with other earlier Utilities Commission decisions. Part V then contrasts the *NC WARN* decision with a decision by the Iowa Supreme Court to allow PPAs in that state. Part VI goes on to explain why the traditional policy justifications for regulating public utilities do not apply to companies, like NC WARN, that seek to provide financing for solar PV systems through power purchase agreements. Finally, Part VII argues that the North Carolina Supreme Court or the North Carolina General Assembly should act to allow PPAs in North Carolina. Unless such action is taken, North Carolina will continue to lag behind other states in developing cleaner, more equitable energy policies.

(Stokes County); Cliffside Steam Station (Cleveland and Rutherford Counties); Marshall Steam Station (Catawba County); Mayo Plant (Roxboro, NC); and Roxboro Steam Plant (Semora, NC). *Power Plants*, DUKE ENERGY, <https://www.duke-energy.com/our-company/about-us/power-plants> [<https://perma.cc/5N2B-SHILL>].

15. *History and Response Timeline*, U.S. ENVTL. PROT. AGENCY, <https://www.epa.gov/dukeenergy-coalash/history-and-response-timeline> [<https://perma.cc/VYT9-XG5Q>].

16. N.C. GEN. STAT. § 62-3(23)(a)(1) (2015).

I. A BRIEF OVERVIEW OF THE ECONOMICS OF SOLAR PV SYSTEMS

Because of the significant upfront costs of solar PV systems, most individuals and businesses cannot afford to purchase them outright.¹⁷ Instead, most consumers wanting to use solar energy to reduce their environmental footprint and to lower their electricity costs must rely on third-party financing. The most common forms of third-party financing for distributed solar PV systems are solar leases and power purchase agreements.¹⁸

Under a solar lease, “a customer agrees to pay a fixed lease payment in exchange for the right to use all of the power produced by [a] PV system” located on the customer’s property.¹⁹ The third-party financier (the “solar financier”), or an agent working on its behalf, installs the solar PV system on the customer’s property.²⁰ Although the solar PV system may be located on the customer’s rooftop, the solar financier retains legal ownership of the PV system.²¹ Under the terms of a typical solar lease, the customer pays the solar financier a set monthly fee for the use of the solar PV system, regardless of the amount of electricity that the system actually

17. DAVID FELDMAN & MARK BOLINGER, NAT’L RENEWABLE ENERGY LAB., ON THE PATH TO SUNSHOT: EMERGING OPPORTUNITIES AND CHALLENGES IN FINANCING SOLAR 19, 21 (2016), <http://www.nrel.gov/docs/fy16osti/65638.pdf> [<https://perma.cc/QAT9-VCDG>] (“In 2014, approximately 28% of new residential PV systems were customer owned . . . Residential PV historically has a high upfront cost, which significantly limits the pool of customers with that amount of cash on hand.”). A National Renewable Energy Laboratory (NREL) report models a typical 5.2kW solar PV system as costing on average \$3.09/W (or \$15,900 in total) during the first quarter of 2015. See DONALD CHUNG ET AL., NAT’L RENEWABLE ENERGY LAB., U.S. PHOTOVOLTAIC PRICES AND COST BREAKDOWNS: Q1 2015 BENCHMARKS FOR RESIDENTIAL, COMMERCIAL, AND UTILITY-SCALE SYSTEMS 7 (2015), <http://www.nrel.gov/docs/fy15osti/64746.pdf> [<https://perma.cc/RVL8-RF86>] NREL further reports that the “median reported U.S. residential system had a capacity of 6.1kW in 2014 and cost approximately \$26,000—which is 40% less than the \$44,000 a similarly sized system would have cost in 2010.” DAVID FELDMAN & MARK BOLINGER, NAT’L RENEWABLE ENERGY LAB., ON THE PATH TO SUNSHOT: EMERGING OPPORTUNITIES AND CHALLENGES IN FINANCING SOLAR 18 (2016). The PV system installed on the roof of Faith Community Church was 5.2 kW. See N.C. Waste Awareness and Reduction Network, SP-100, SUB 31, at 1 (N.C. Utils. Comm’n June 17, 2015) (Request for Declaratory Ruling).

18. FELDMAN & BOLINGER, *supra* note 17, at 23. According to NREL, third-party ownership systems, including solar leases and power purchase agreements accounted for “approximately 72% of the residential PV market installed in 2014.” *Id.*

19. *Id.*

20. SOLAR ENERGY INDUS. ASS’N., MODEL POWER PURCHASE AGREEMENT FOR RESIDENTIAL CUSTOMERS (AGGREGATED) 2, http://www.seia.org/sites/default/files/resources/SAPC%20Residential_PPA%20Agreement%20_CA_%20Aggregated_Clean_5-20-16.doc [<https://perma.cc/7BBE-SMFN>] (“The System will be installed by [Provider] at the address [the customer] listed above.”).

21. *Id.* at 5.

produces.²² The solar financier commonly agrees under the solar lease to provide maintenance and upkeep of the system in the event of any problems during the term of the lease.²³

In contrast, with a power purchase agreement, “the customer agrees to buy the power generated by the system at a set price per kilowatt-hour.”²⁴ Under this approach, the solar financier or its agent installs the solar PV system on the customer’s property and, as with a solar lease, the solar financier retains ownership of the system.²⁵ Rather than paying a set monthly fee for the electricity produced by the system, the PPA customer pays only for the use of the system.²⁶

Therefore, under both a solar lease and a PPA, the solar PV system located on the customer’s property is owned by the solar financier. The major difference between the solar lease and the PPA is that with a lease the customer pays a flat monthly amount for the use of the solar PV system, while under a PPA the customer pays a specified amount for each kilowatt hour (“kWh”) of electricity generated by the solar PV system.²⁷ To illustrate, the terms of the solar lease may call for the customer to pay \$50 per month for the use of a solar PV system, regardless of the amount of electricity produced by the system; the PPA, on the other hand, might call for the customer to pay \$0.05 per kWh of electricity produced by the system, with the customer paying only for the electricity actually

22. Note, however, that the form solar lease for residential customers created by the Solar Energy Industries Association (SEIA) provides for inclusion of a performance guaranty that allows for a refund on lease payments in the event that the solar PV system generates less electricity than guaranteed by the lessor. *See id.* at 14 (“[Provider] guarantees that during the Power Purchase Agreement Term the System will operate within manufacturer’s specifications and if it does not that [Provider] will repair or replace any defective part and restore System performance.”).

23. *See id.* at 3 (requiring the lessor to “repair the System pursuant to the Limited Warranty and reasonably cooperate with [the lessee] when scheduling repairs.”).

24. FELDMAN & BOLINGER, *supra* note 17, at 23. For a form power purchase agreement developed by the Interstate Renewable Energy Council, *see Solar Power Purchase Agreements: a Toolkit for Local Governments*, INTERSTATE RENEWABLE ENERGY COUNCIL, <http://www.irecusa.org/publications/solar-power-purchase-agreements-a-toolkit-for-local-governments/> [<https://perma.cc/2ER3-FWGK>].

25. *See* INTERSTATE RENEWABLE ENERGY COUNCIL, SOLAR ENERGY POWER PURCHASE AGREEMENT AND SALE 3-1, http://www.irecusa.org/wp-content/uploads/2015/04/Final_Clean_PPA_Template.docx [<https://perma.cc/HPC2-AR3R>] (“A retail solar PPA is a long-term contract to purchase power from a third-party owner and operator of a solar energy generation system. This contrasts with a ‘direct-ownership’ arrangement, where the local government itself owns a solar project.”).

26. *Types of Solar Leases and PPAs*, ENERGY SAGE, <https://www.energysage.com/solar/financing/types-of-solar-leases-and-ppas> [<https://perma.cc/V79R-CBH2>] (describing the differences between solar leases and power purchase agreements).

27. *Id.*

generated. From the customer's perspective, PPAs are often considered more attractive than solar leases because of the reduced risk of overpayment. Since a customer only pays for the electricity actually produced under a PPA, the customer does not run the risk of "overpaying" if the solar PV system produces less electricity than anticipated.²⁸

The method for financing solar PV systems is only one aspect of the economics of distributed solar. Tax incentives and net metering are two other important components. As mentioned above, the solar financier retains ownership of the PV system under both a solar lease and a PPA. By retaining ownership, the financier is able to take advantage of substantial tax benefits or pass those benefits on to tax equity investors.²⁹ The tax benefits enable the solar financier, in many instances, to charge a lower rate to the customer for the energy generated by the solar PV system than the public utility charges.³⁰ On the federal level, the tax benefits include a thirty

28. See MARK BOLINGER, ERNEST ORLANDO LAWRENCE BERKELEY NAT'L LAB., FINANCING NON-RESIDENTIAL PHOTOVOLTAIC PROJECTS: OPTIONS AND IMPLICATIONS 18 (2009), <https://stuff.mit.edu/afs/athena/dept/cron/Backup/project/urban-sustainability/Old%20files%20from%20summer%202009/Bjorn/solar/financing%20non-res%20pv%20projects%20Berkley%20Lab%202009.pdf> [https://perma.cc/5HCW-GL6D] (stating that "[t]he primary difference [between solar leases and PPAs]—which reportedly is a major selling point for the PPA—is that, under a PPA, the site host is not required to operate and maintain the system, and likewise faces no performance risk. In short, the PPA model effectively provides the site host what it presumably *really* wants—solar *power* at an affordable price, rather than solar *equipment* that it must operate and maintain." (emphasis in original) (footnote and citation omitted)).

29. A tax-exempt customer, such as Faith Community Church, would not be able to take advantage of these tax benefits if it owned the solar PV system, since the tax-exempt customer is not subject to tax and therefore has no use for the tax benefits. The third party owner in a power purchase agreement, on the other hand, is typically a taxable entity or serves as a conduit to taxable investors and therefore is able to take advantage of the tax benefits. The facts of the NC WARN decision are somewhat unusual in that a tax-exempt entity (NC WARN) served as third-party owner under the power purchase agreement. NC WARN entered into the PPA with Faith Community Church despite being unable to take advantage of the tax benefits; however, as a "test case" in hopes of opening the market for financing solar PV systems in North Carolina in furtherance of its mission to combat climate change. In large-scale solar projects, tax equity investors are used, since relatively few individuals or third-party financiers could take advantage of the significant amount of tax savings available. See Keith Martin, *Solar Tax Equity Structures*, CHADBOURNE & PARKE LLP (Sept. 2015), http://www.chadbourne.com/Solar_Tax_Equity_Structures_projectfinance [https://perma.cc/ECB5-M2VJ] (providing a description of tax equity structures commonly used in financing solar projects); see also LINDER & DI CAPUA, *supra* note 4, at 5–10 (describing the various business models for "solar deployment").

30. In the event that the solar PV site host is a tax exempt entity, the arrangement with the solar financier may need to be structured as a PPA, rather than a solar lease, in order for the solar financier to be able to take advantage of the tax benefits. See I.R.C. § 168(h)(1)(B)(ii) (2012) (setting out rules regarding "disqualified leases"); see also, BOLINGER, *supra* note 28, at 24 (setting out rules regarding "disqualified leases"); see also, MARK BOLINGER, ERNEST ORLANDO LAWRENCE BERKELEY NAT'L LAB., FINANCING NON-RESIDENTIAL PHOTOVOLTAIC PROJECTS: OPTIONS AND IMPLICATIONS 33 (Jan. 2009), <https://emp.lbl.gov/sites/all/files/REPORT%20lbnl>

percent Investment Tax Credit,³¹ as well as a five-year accelerated depreciation schedule.³² Depending on the state where the customer is located, state tax benefits may also apply. North Carolina, for example, provided for a thirty-five percent income tax credit for solar PV systems installed before December 31, 2015, when the General Assembly allowed this tax credit to expire.³³

Another factor in the economics of distributed solar is so-called “net metering.” As defined by the Solar Energy Industries Association, net metering “allows residential and commercial customers who generate their own electricity from solar power to feed electricity they do not use back into the grid.”³⁴ When a solar PV system produces more electricity than the customer is using at any particular time, the excess electricity is fed back into the grid and the customer is credited for that excess electricity. As a result, customers with solar PV systems are billed by the public utility only for the “net” electricity they use—electricity consumed from the grid less electricity fed into the grid. Some states, like North Carolina, offer a one-to-one credit for solar-generated electricity fed into the grid by customers.³⁵ This means that if a solar PV system located on a customer’s property

1410e.pdf [<https://perma.cc/AYT5-39UZ>] (stating that “[s]ince tax-exempt entities cannot enter into a ‘normal’ lease transaction (i.e., a taxable operating or capital lease . . .) without jeopardizing the use (by either the lessor or the lessee) of the project’s Tax Benefits, it is vital that a solar PPA with a tax-exempt site host be properly structured as a service contract, so that it cannot be misconstrued as a lease.”).

31. I.R.C. § 25D (2012) (residential); *id.* § 48 (2012) (commercial and utility). See also, *Solar Investment Tax Credit (ITC)*, SOLAR ENERGY INDUS. ASS’N, <http://www.seia.org/policy/finance-tax/solar-investment-tax-credit> [<https://perma.cc/X9T5-AZN2>].

32. I.R.C. § 168(e)(3)(B)(I). See also *Depreciation of Solar Energy Property in MACRS*, SOLAR ENERGY INDUS. ASS’N, <http://www.seia.org/policy/finance-tax/depreciation-solar-energy-property-macrs> [<https://perma.cc/JE38-HVKB>] (explaining the Modified Acceleration Cost Recovery System); *Solar Investment Tax Credit (ITC)*, *supra* note 31.

33. See N.C. GEN. STAT. § 105-129.16A(a) (2015); *Renewable Energy Tax Credit (Personal)*, DATABASE OF STATE INCENTIVES FOR RENEWABLE ENERGY & EFFICIENCY, NC CLEAN ENERGY TECH. CTR., <http://programs.dsireusa.org/system/program/detail/541> (last updated Feb. 2, 2017) [<https://perma.cc/L6ES-2Z8K>] (last updated Feb. 2, 2017) (“This credit expired at the end of 2015. Systems installed in 2016 or later years will not qualify for this credit.”).

34. See *Net Metering*, SOLAR ENERGY INDUS. ASS’N, <http://www.seia.org/policy/distributed-solar/net-metering> [<https://perma.cc/D3WP-WHLL>]. The North Carolina Utilities Commission has defined net metering as “the billing arrangement whereby the customer-generator is billed according to the difference over a billing period between the amount of energy consumed by the customer at its premises and the amount of energy generated by the renewable energy facility.” Investigation of Proposed Net Metering Rule E-100, Sub 83, at 3, 2005 WL 2709031 (N.C. Utils. Comm’n Oct. 20, 2005).

35. North Carolina’s current net metering policy is set forth in a 2009 Order by the Utilities Commission. See Investigation of Net Metering, Docket No. E-100, SUB 83, at 1 (N.C. Utils. Comm’n Mar. 31, 2009).

generates one kWh of electricity more than the customer uses, and that kWh is fed into the grid, the customer is credited for one kWh that the customer later consumes from the grid. Other states have less generous net metering policies, crediting customers at less than a one-to-one rate for electricity that the customer feeds into the grid.³⁶ The amount of credit received by a customer for electricity produced by a solar PV system located on the customer's property and fed into the electric grid factors heavily into the financial analysis of whether opting for distributed solar makes sense.³⁷

Thus, the primary economic factors in deciding whether to participate in the distributed solar market include the direct cost of the solar PV system and the financing options available for bearing that cost, the tax benefits associated with the installation and use of the PV system, and the amount of credit allowed for excess electricity generated by the solar PV system and fed into the grid. North Carolina has hampered the spread of distributed solar by disallowing PPAs, one of the main methods for financing PV systems, and by failing to retain state-level tax incentives for solar electricity production. The state does maintain one of the more generous net metering policies,³⁸ but, given the decision in *NC WARN*, the benefit of net metering is available only to consumers who can afford the high upfront cost of purchasing a solar PV. Thus, the State's restrictive financing policy and favorable net metering policy combine to exacerbate economic inequality, as only the wealthy can afford to participate in the solar PV market and thereby receive the benefit of the State's net metering

36. Nevada, for example, credits customers at the "avoided cost" rate rather than at the full retail rate for electricity fed into the grid. The "avoided cost" rate is the price that the public utility would have to pay to generate electricity itself or the amount it would pay to acquire electricity on the open market, essentially the wholesale cost of electricity rather than the retail rate paid by public utilities in North Carolina. See *Net Metering*, DATABASE OF STATE INCENTIVES FOR RENEWABLE ENERGY & EFFICIENCY, NC CLEAN ENERGY TECH. CTR., <http://programs.dsireusa.org/system/program/detail/372> (last updated Oct. 28, 2016) [<https://perma.cc/3E44-T8ZM>] ("All exported generation is credited at the avoided cost rate. Any credits that exceed the customer's monthly bill will be carried over to the next billing period. Remaining credits at the end of the year will be paid to the customer.").

37. Under the terms of a typical power purchase agreement, the host customer is billed for all electricity generated by the on-site solar PV system, but is allowed the benefit of the net metering credit for any excess electricity fed into the grid. See INTERSTATE RENEWABLE ENERGY COUNCIL, *supra* note 25, at 7–13 ("Any output not immediately usable by Host Customer will be exported to the Host Utility pursuant to Interconnection and Net Metering Agreements."); see also SOLAR ENERGY INDUS. ASS'N, *supra* note 34 ("Net metering is a billing mechanism that credits solar energy system owners for electricity they add to the grid.").

38. Arguably, a one-for-one credit for electricity fed into the grid overcompensates the customer, since the customer is effectively getting the equivalent of battery storage of the electricity that the solar PV system produces without having to pay for that storage. See FELDMAN & BOLINGER, *supra* note 17, at 18–19 (stating that most residential systems feedback into the grid and are credited at retail rates).

policy.³⁹ Ironically, as discussed below, the rationale behind the Utilities Commission's decision in *NC WARN* was to protect the economic interests of consumers who do not participate in the solar PV market. The effect of the *NC WARN* decision, however, is to allow only those who can afford to self-finance solar PV systems to reap the benefit of the State's favorable net metering policy.⁴⁰

II. STATUTORY AND CASE LAW BACKGROUND

In order to understand the Utilities Commission's decision to prohibit power purchase agreements in *NC WARN*, it is first helpful to understand the statutory and case law background that informed the decision.

A. Statutory Background: Definition of a "Public Utility"

By statute, North Carolina allows for the sale of electricity by only one "public utility" in a specified geographic area.⁴¹ The North Carolina General Statutes define a "public utility" as follows:

39. The North Carolina Utilities Commission has defined net metering as "the billing arrangement whereby the *customer-generator* is billed according to the difference over a billing period between the amount of energy consumed by the customer at its premises and the amount of energy generated by the renewable energy facility." *See Investigation of Net Metering*, Docket No. E-100, Sub 83, at 3 (emphasis added). It is not clear from this definition whether a solar financier would be permitted to take advantage of the State's net metering policy, since the solar financier is arguably not a "customer-generator." If the solar generator is allowed to participate in net metering, that benefit could be passed through to the host consumer. *See id.* If not, allowing host consumers to enter into PPAs and receive the resulting benefit of reduced costs for electricity would still mitigate the inequality that currently exists in which only the wealthy benefit from both subsidized solar electricity (subsidized through the tax benefits available) and from the State's net metering policy. *See* Ashley Brown & Jillian Bunyan, *Valuation of Distributed Solar: A Qualitative View*, 27 ELECTRICITY J. 27, 27 (2014) (noting that retail net metering "effectively transfers wealth from less affluent to more affluent consumers").

40. *See* Brown & Bunyan, *supra* note 39, at 44 (arguing that retail net metering provides a subsidy from non-solar customers to distributed solar generators). *But see* Mark Muro & Devashree Saha, *Rooftop Solar: Net Metering is a Net Benefit*, BROOKINGS (May 23, 2016), <https://www.brookings.edu/research/rooftop-solar-net-metering-is-a-net-benefit/> [https://perma.cc/CV5Q-8SSA] (listing numerous studies contending that "net metering benefits all utility customers").

41. This was incorporated into statute by the Territorial Assignment Act of 1965. *See* ch. 287, 1965 N.C. Sess. Laws 328, 328–41 (codified at N.C. GEN. STAT. §§ 62-110.2, 160A-331–38). *See also* Morgan v. Hertford, 70 N.C. App. 725, 727, 321 S.E.2d 170, 172 (1984) ("The Territorial Assignment Act of 1965 . . . represents an attempt to eliminate the 'uneconomic duplication of transmission and distribution systems' bred of unbridled competition between public utilities, electric membership corporations and municipalities by designating the various competitors' rights.") (quoting Domestic Elec. Serv., Inc. v. Rocky Mount, 285 N.C. 135, 203 S.E.2d 838 (1974))). As explained by the North Carolina Utilities Commission, under the "traditional regulatory bargain," public utilities exchange the "benefit of monopoly franchised service territory for [the] obligation to provide adequate service at reasonable rates." N.C. UTILS. COMM'N, NORTH CAROLINA'S PUBLIC UTILITY INFRASTRUCTURE AND REGULATORY CLIMATE

[A] person, whether organized under the laws of this State or under the laws of any other state or country, now or hereafter owning or operating in this State equipment or facilities for . . . producing, generating, transmitting, delivering or furnishing electricity, piped gas, steam or any other like agency for the production of light, heat or power *to or for the public for compensation*; provided, however, that the term “public utility” shall not include persons who construct or operate an electric generating facility, the primary purpose of which facility is for such person’s own use and not for the primary purpose of producing electricity, heat, or steam for sale to or for the public for compensation.⁴²

Unquestionably, the solar financier under a power purchase agreement owns equipment, the solar PV system, for delivering electricity to the host consumer. That is the very essence of the PPA—the financier retains ownership of the PV system (primarily to obtain the accompanying tax benefits associated with that ownership) and sells the electricity produced by the system to the consumer. At its core then, the determination of whether the solar financier is a “public utility” as defined by statute depends on whether this arrangement is deemed to amount to furnishing electricity “*to or for the public*.⁴³ If it is, the arrangement established by the power purchase agreement violates the incumbent public utility’s exclusive franchise to sell electricity to the public in the particular geographic area.

It is important to note that the second part of the definition of “public utility” contains the exception for those who can afford to purchase solar PV systems outright, rather than needing to enter into a financing arrangement like a power purchase agreement. The statute states that the term “public utility” does not include “persons who construct or operate an electric generating facility, the primary purpose of which facility is for such person’s own use and not for the primary purpose of producing electricity . . . for sale to or for the public for compensation.”⁴⁴ Thus, if a consumer can afford to purchase a solar PV system outright, the statute specifically excludes that consumer from the definition of public utility. Only consumers who cannot afford the high upfront cost of solar PV systems need to worry about whether the arrangements they enter into to finance the systems come within the jurisdiction of the Utilities Commission.

4 (July 2016) <http://www.ncuc.commerce.state.nc.us/overview/Overview.pdf> [<https://perma.cc/S5LX-NKDV>].

42. N.C. GEN. STAT. § 62-3(23)(a)(1) (emphasis added).

43. *Id.*

44. *Id.*

B. *Case Law Precedent: State ex rel. Utilities Commission v. Simpson*

According to the North Carolina Utilities Commission, “the most significant case addressing the issue of ‘sales to or for the public’ is *State ex rel. Utils. Comm’n v. Simpson*.⁴⁵ In *Simpson*, the North Carolina Supreme Court considered whether two-way radio services offered by a physician, Dr. William Simpson, to fifty-five to sixty other members of the Cleveland County Medical Society constituted an offer of the service “to or for the public[,]” and therefore rendered Dr. Simpson a public utility subject to regulation by the Utilities Commission.⁴⁶

The *Simpson* court explained that the provision of a service “to or for the public” does not necessarily mean that the service must be offered to “everybody all the time.”⁴⁷ In other words, the fact that Dr. Simpson offered two-way radio service only to members of his medical society, and not to the public at large, did not preclude a finding that the service was offered “to the public” within the meaning of the statute. The *Simpson* court quoted from an earlier North Carolina Supreme Court case, *Utilities Commission v. Carolina Telephone and Telegraph Co.*, in support of this proposition, stating

One offers service to the “public” within the meaning of [the public utility] statute when he holds himself out as willing to serve all who apply up to the capacity of his facilities. It is immaterial, in this connection, that his service is limited to a specified area and his facilities are limited in capacity. For example, the operator of a single vehicle within a single community may be a common carrier.⁴⁸

According to the *Simpson* court, this language from *Carolina Telephone* did not foreclose the possibility that a service offered only to a “selected class of persons might also be considered an offering to the ‘public.’”⁴⁹ To resolve this issue of whether a service offered only to a subgroup of persons (Cleveland County doctors in the *Simpson* case) constitutes an offer “to or for the public[,]” the *Simpson* court first reviewed decisions from other jurisdictions. The court summarized the “teaching” from these cases as follows:

45. N.C. Waste Awareness and Reduction Network, SP-100, SUB 31, at 18, 2016 WL 1572367, at *18 (N.C. Utils. Comm’n Apr. 15, 2016) (Order Issuing Declaratory Ruling).

46. *North Carolina v. Simpson*, 295 N.C. 519, 520, 246 S.E.2d 753, 754 (1978).

47. *Id.* at 522, 246 S.E.2d at 755 (quoting *Terminal Taxicab Co. v. District of Columbia*, 241 U.S. 252, 255 (1916)).

48. *Id.* (quoting *State ex rel. Utilities Comm’n. v. Carolina Tel. & Tel. Co.*, 267 N.C. 257, 268, 148 S.E.2d 100, 109 (1966)).

49. *Id.* at 523, 246 S.E.2d at 756.

[W]hether any given enterprise is a public utility within the meaning of a regulatory scheme does not depend on some abstract, formulistic definition of "public" to be thereafter universally applied. What is the "public" in any given case depends rather on the regulatory circumstances of that case. Some of these circumstances are (1) nature of the industry sought to be regulated; (2) type of market served by the industry; (3) the kind of competition that naturally inheres in that market; and (4) effect of non-regulation or exemption from regulation of one or more persons engaged in the industry. The meaning of "public" must in the final analysis be such as will, in the context of the regulatory circumstances . . . accomplish the legislature's purpose and comport with its public policy.⁵⁰

The *Simpson* court went on to endorse the position previously taken by the supreme courts of Iowa and New Mexico that "sales to sufficient of the public to clothe the operation with a public interest" amount to an offering "to or for the public" and therefore come within the definition of a public utility.⁵¹ According to the North Carolina Supreme Court in *Simpson*, "[i]t is this type of flexible interpretation that is necessary to comport legislative purpose with the variable nature of modern technology."⁵²

In light of this standard, the *Simpson* court examined the characteristics of the radio common carrier market in Cleveland County, where Dr. Simpson was offering the two-way radio service. The court stated that the market was "a small one whose users fall into definable classes," such as doctors, real estate agents, and builders.⁵³ Dr. Simpson had *offered* his two-way radio service to the fifty-five to sixty members of the Cleveland County Medical Society, and he was *actually providing* the service to ten of those members.⁵⁴ The court stated that there were "only 22 radio common carrier subscribers in the whole of Cleveland County" and, as a result, Dr. Simpson was providing service for "over 45% of the available market."⁵⁵

Based on these facts about the two-way radio service market in Cleveland County, the court concluded that if a definition of "public" were adopted that "allowed prospective offerors of services to approach . . . separate classes [such as doctors, real estate agents, and builders] without falling under the statute, the industry could easily shift from a regulated to

50. *Id.* at 524, 246 S.E.2d at 756-57 (quoting State *ex rel.* Utils. Comm'n v. Simpson, 32 N.C. App. 543, 546, 232 S.E.2d 871, 873 (1977)).

51. *Id.*

52. *Id.* at 524, 246 S.E.2d at 757.

53. *Id.* at 525, 246 S.E.2d at 757.

54. *Id.*

55. *Id.*

a largely unregulated one.”⁵⁶ According to the court, “the end result . . . could well be that the only subscribers left in the regulated market would be those who fit in no easily definable class.”⁵⁷ The court predicted that “unregulated radio services might focus on classes which are easier and more profitable to serve[,]” with the result being to “leave burdensome, less profitable service on the regulated portion resulting inevitably in higher prices for the service.”⁵⁸

Thus, after laying out four “regulatory circumstances” that it deemed relevant in determining what constitutes “the ‘public’” for public utility purposes, the *Simpson* court focused on just two of those circumstances: (1) the type of market served by the industry; and (2) the effect of non-regulation.⁵⁹ With respect to the type of market served by the radio common carrier industry, the court characterized the market as small and comprised primarily of users who could be designated into separate, definable categories such as doctors, real estate agents, and builders.⁶⁰ As to the effect of non-regulation, the court found that unregulated providers of two-way radio services served a significant portion of the overall market (over 45% by Dr. Simpson alone), potentially resulting in increased costs for those who did not fall into the definable categories that unregulated competitors were likely to target and serve.⁶¹ The court did not expressly discuss the other two “regulatory circumstances” (nature of the industry and kind of competition that naturally inheres in the market) that it had declared to be relevant in determining whether regulation by the Utilities Commission would “accomplish ‘the legislature’s purpose and comport with its public policy.’”⁶² In summary, the *Simpson* court concluded that if Dr. Simpson (and anyone else who, like him, offered two-way radio service in Cleveland County) were not considered a public utility and regulated by the Utilities Commission, the two-way radio market would effectively become an unregulated market, resulting in higher prices for the few remaining consumers who were not able to receive service from an unregulated service provider.⁶³

The decision in *Simpson* allows for substantial subjectivity in determining whether a service is offered to “the public” and therefore comes within the regulatory jurisdiction of the Utilities Commission. The

56. *Id.*

57. *Id.*

58. *Id.*

59. See *id.* at 524, 246 S.E.2d at 757.

60. *Id.* at 525, 246 S.E.2d at 757.

61. *Id.*

62. See *id.* at 524, 246 S.E.2d at 756 (quoting State *ex rel.* Utils. Comm’n v. Simpson, 32 N.C. App. 543, 546, 232 S.E.2d 871, 873 (1977)).

63. *Id.* at 525, 246 S.E.2d at 757.

“regulatory circumstances” introduced by the court as relevant to the determination are both non-exhaustive⁶⁴ and, based on the absence of any discussion of two of those circumstances in the *Simpson* case itself, apparently non-essential. Thus, *Simpson* provides only loose guidance for a tribunal (a court or the Utilities Commission) in determining whether a service is offered “to or for the public” and therefore subject to regulation by the Utilities Commission.⁶⁵ As explained by the *Simpson* court, the regulatory circumstances enumerated in the opinion are ultimately intended to assist the decision maker to assess whether regulation of the proffered service will “accomplish the legislature’s purpose and comport with its public policy.”⁶⁶

Given the flexibility provided in the *Simpson* case, identifying those services that the General Assembly would intend to be regulated by the Utilities Commission has proven somewhat unpredictable. This is the case, at least in part, because the General Assembly has made numerous public policy pronouncements relating to energy production. Specifically, the General Assembly has stated that it is the “declared policy” of the State:

1. “To promote the inherent advantage of regulated public utilities”⁶⁷
2. “To promote adequate, reliable, and economical utility service to all of the citizens and residents of the state”⁶⁸
3. “To assure that resources necessary to meet future growth through the provision of adequate, reliable utility service include use of the entire spectrum of demand-side options, including but not limited to conservation, load management and efficiency programs, as additional sources of energy supply and/or energy demand reductions”⁶⁹
4. “To encourage and promote harmony between public utilities, their users and the environment.”⁷⁰

In addition, the General Assembly has declared it to be the policy of the State to “promote the development of renewable energy and energy efficiency through the implementation of a Renewable Energy and Energy Efficiency Portfolio Standard (REPS).”⁷¹ Under the REPS requirement, all electric public utilities, including investor-owned utilities such as Duke

64. The court characterized the four factors it set forth as “some” of the regulatory circumstances relevant to determining whether a service was offered “to the public.” *Id.* at 524, 246 S.E.2d at 756.

65. *Id.* at 525, 246 S.E.2d at 757.

66. *Id.* at 524, 246 S.E.2d at 756 (quoting *Simpson*, 32 N.C. App. 543, 546, 232 S.E.2d 871, 873 (1977)).

67. N.C. GEN. STAT. § 62-2(a)(2) (2015).

68. *Id.* § 62-2(a)(3).

69. *Id.* § 62-2(a)(3a).

70. *Id.* § 62-2(a)(5).

71. *Id.* § 62-2(a)(10).

Energy, are required by 2021 to meet at least 12.5% of the State's energy needs through renewable energy resources and energy efficiency measures.⁷² As explained by the General Assembly, the REPS requirement is intended to do all of the following:

1. "Diversify the resources used to reliably meet the energy needs of consumers in the State"
2. "Provide greater energy security through the use of indigenous energy resources available within the State"
3. "Encourage private investment in renewable energy and energy efficiency"
4. "Provide improved air quality and other benefits to energy consumers and citizens of the State."⁷³

The potentially conflicting policies of "promot[ing] the inherent advantage of regulated public utilities"⁷⁴ while also "promot[ing] the development of renewable energy and energy efficiency"⁷⁵ has led to a series of pre-NC *WARN* decisions by the Utilities Commission that prove difficult to reconcile. Part III briefly discusses those decisions before turning to an analysis of the NC *WARN* decision itself.

III. PRE-NC *WARN* UTILITIES COMMISSION DECISIONS CONSTRUING "TO OR FOR THE PUBLIC"

Before the Utilities Commission's decision in *NC WARN*, the Commission construed the meaning of the term "to or for the public[,] as" that term is used in the statutory definition of a public utility, in six key decisions. These decisions are described below.

A. *Natural Power, Inc. (1988)*

In *Natural Power, Inc., Raleigh Landfill Gas Corp.*, ("Natural Power"),⁷⁶ the Utilities Commission decided that the sale of both gas and steam via individually negotiated contracts did not render the sellers public utilities.⁷⁷ Under the facts of the case, a landfill owner (Raleigh Landfill Gas Corporation) entered into an agreement to sell landfill gas to a single customer (Natural Power, Inc.).⁷⁸ Natural Power, Inc., in turn planned to use the gas to generate steam, which it contracted to sell to a

72. *Id.* § 62-133.8(b).

73. *Id.* § 62-2(a)(10).

74. *Id.* § 62-2(a)(2).

75. *Id.* § 62-2(a)(10).

76. SP-100, SUB 1, 99 Pub. Util. Rep. 4th 340 (N.C. Utils. Comm'n Dec. 22, 1988), 1988 WL 391223.

77. *Id.* at 343.

78. *Id.* at 341.

pharmaceutical plant owned by Ajinomoto, USA, Inc.⁷⁹ Ajinomoto intended to use the steam for pharmaceutical processing and related business purposes.⁸⁰

In concluding that neither Raleigh Landfill nor Natural Power should be regulated as public utilities, the Commission relied on four main factors. First, the end product of the various activities involved was steam, which “has not been regulated to the same degree” as electricity.⁸¹ Second, the contracts involved were “bargained for” transactions between individual corporations rather than offers to the public at large.⁸² Third, the steam provided by Natural Power to Ajinomoto would be used in Ajinomoto’s industrial processes rather than to generate electricity, and the steam would not be resold to other parties.⁸³ And fourth, the steam provided by Natural Power would not meet all of Ajimonoto’s needs, and Ajimonoto would remain dependent on the incumbent public utility for the balance of its steam needs.⁸⁴ This meant that “not all public utility revenues from Ajinomoto will be diverted.”⁸⁵ Based on these factors, the Utilities Commission held that the arrangement did not call for regulation of any of the parties as a public utility.⁸⁶

B. *National Spinning Co. (1996)*

The proposed arrangement in *National Spinning Co.*,⁸⁷ involved two parties working together to produce electricity. As proposed, a gasifier owned by National Spinning Company, Inc. (“National Spinning”) would gasify wood waste.⁸⁸ The resulting gas would be sold by National Spinning to Wayne S. Leary (“Leary”).⁸⁹ Leary would run the gas through a steamer, which he owned.⁹⁰ Leary would then sell the resulting steam to National Spinning, which would, in turn, pass the steam through a steam turbine and other electric generating facilities owned by National Spinning to produce electricity.⁹¹ National Spinning planned to use the electricity for its own

79. *Id.*

80. *Id.*

81. *Id.* at 342.

82. *Id.* at 342–43.

83. *Id.* at 343.

84. *Id.*

85. *Id.*

86. *Id.*

87. SP-100, SUB 7 (N.C. Utils. Comm’n Apr. 22, 1996) (denying petition for declaratory ruling).

88. *Id.*

89. *Id.*

90. *Id.*

91. *Id.*

industrial purposes.⁹² The company did not expect the arrangement with Leary to meet all of its electricity needs, however, so National Spinning would remain connected to the grid and continue to purchase electricity from the incumbent public utility, Carolina Power & Light.⁹³

Under these facts, the Commission denied the petition by National Spinning and Leary for a declaratory ruling that “no regulated utility would result from the proposed activities.”⁹⁴ The Commission based its decision in large part on the negative consequences it believed would result from the arrangement, and similar ones that might follow, to both electric utilities and the public at large. With respect to the incumbent electric utility, the Commission stated that “unregulated electric suppliers could ‘cherry pick’ the electric utilities’ best customers, leaving them with significant stranded investment.”⁹⁵ It explained that regulated electric utilities plan and build generation plants based on the needs of large industrial customers, like National Spinning, which spent more than \$3 million annually in electricity costs.⁹⁶ If unregulated electricity suppliers were allowed to lure away this type of highly desirable customer, the public utility might not make the expected return on its investment in generating facilities intended to serve such customers. Ultimately, this would harm other consumers, as the lost revenues suffered by the public utility would have to be made up through higher rates charged “to the remaining residential, commercial and smaller industrial customers, who are not in a position to install turbine generators and purchase generation steam.”⁹⁷

The reasoning in *National Spinning*, with the Utilities Commission focusing on potential cost increases to consumers not able to receive service from an unregulated provider, is very similar to the basis for the decision by the court in *Simpson*. And as with *Simpson*, where the unregulated provider served forty-five percent of the market for two-way radio service in Cleveland County,⁹⁸ the scale of the potential loss to the incumbent electric utility in *National Spinning* may have influenced the decision in the case. Specifically, with National Spinning purchasing \$3 million in electricity from CP&L annually, the prospect of losing such a significant customer, and the accompanying loss of investment by the utility in the infrastructure necessary to serve the consumer, factored into the Utilities Commission’s decision to prohibit the proposed arrangement.⁹⁹

92. *Id.*

93. *Id.*

94. *Id.*

95. *Id.*

96. *Id.*

97. *Id.*

98. State *ex rel.* Utils. Comm’n v. Simpson, 295 N.C. 519, 524, 246 S.E.2d 753, 757 (1978).

99. See *Nat'l Spinning*, SP-100, SUB 7, 1996 WL 252627.

C. *Progress Solar Investments, LLC (2009)*

In *Progress Solar Investments, LLC*,¹⁰⁰ the Utilities Commission held that the sale of solar powered lighting did not render the seller a public utility.¹⁰¹ Progress Solar Investments (“PSI”) proposed to “install and maintain solar LED lighting systems to provide light in user-designated areas.”¹⁰² The lighting systems were completely self-contained, meaning that PSI did not need electricity from the grid to power the lighting systems, but instead planned to generate its own electricity through an on-site solar PV system.¹⁰³

The argument for treating PSI as a public utility was based primarily on the statutory definition, which, as previously discussed, provides that a public utility is “a person . . . now or hereafter owning or operating in this State equipment or facilities for . . . [p]roducing, generating, transmitting, delivering or furnishing electricity, piped gas, steam or any other like agency *for the production of light*, heat or power to or for the public for compensation.”¹⁰⁴ Despite the fact that PSI planned to own and operate solar electricity-generating equipment on the customer’s property “for the production of light[,]” the Commission determined PSI was not a public utility.¹⁰⁵ The Commission explained this result as follows:

The use of solar resources to provide lighting as proposed by PSI is consistent with the recently enacted policy of the State to promote the development of renewable resources. PSI will not be holding itself out to provide solar lighting to the general public, and the lighting will be provided only as a result of bargained for transactions and pursuant to agreed-upon terms and conditions. Unlike steam and piped gas, the light produced by the solar lighting systems cannot be used to generate electricity and thus be used indirectly to bypass the electric utilities’ exclusive franchises.¹⁰⁶

The Utilities Commission’s reasoning regarding the potential impact (or lack thereof) on the electric utilities’ exclusive franchises seems questionable. It is true that the end consumer could not use the light produced by PSI to generate electricity.¹⁰⁷ Even so, the light purchased by the consumer existed only due to the electricity generated by PSI’s on-site solar PV system, rather than because of electricity generated and sold by

100. SP-100, SUB 24, 278 Pub. Util. Rep. 4th 525 (N.C. Utils. Comm’n Nov. 25, 2009).

101. *Id.* at 528.

102. *Id.* at 526.

103. *Id.*

104. N.C. GEN. STAT. § 62-3(23)(a)(1) (2015) (emphasis added).

105. *Progress Solar Investments*, 278 Pub. Util. Rep. 4th at 527–28.

106. *Id.* at 528.

107. *See id.*

the incumbent electric utility.¹⁰⁸ Consequently, despite the Utilities Commission's statement otherwise, the arrangement under review indirectly bypassed the public utility's exclusive franchise on the sale of electricity.

D. FLS YK Farm, LLC (2009)

In *FLS YK Farm, LLC*,¹⁰⁹ the Commission considered whether the provision of hot water by one party to another through the use of solar thermal panels rendered the first party a public utility. The Commission concluded that

the sale of BTUs [British Thermal Units] by the owner or operator of solar thermal panels located on-site to a single entity pursuant to a "bargained for" transaction for the purpose of heating water for the entity's on-site use does not constitute the provision of utility service to or for the public and, therefore, such an owner or operator would not fall within the [statutory] definition of a public utility.¹¹⁰

The reasons cited by the Commission for reaching this result included: the existence of a bargained-for agreement between a single provider and a single customer; the fact that the heated water would be used on-site; and the public policy considerations that had recently been articulated by the General Assembly.¹¹¹ Those public policy considerations, taken directly from the REPS requirement enacted by the General Assembly in 2007, were "to promote the development of renewable energy for the purposes of diversifying the State's energy resources, providing greater energy security through the use of indigenous resources, encouraging private investment in renewable energy, and improving air quality."¹¹² The fact that the Utilities Commission cited the policy goals set forth in the REPS requirement in the context of an agreement between two private parties indicates that those goals apply not just to the investor-owned utilities that are expressly subject to the requirement, but also apply more broadly to consumers of electricity in the State.

The Commission explicitly noted in the *FLS YK Farm* decision that the solar-thermal energy facility would not generate any electricity, and that the "output of the solar panels [would] be used solely to heat water belonging to [the customer], which [would] then use the hot water for its

108. *See id.* at 526.

109. RET-4, SUB 0, 2009 WL 1106526 (N.C. Utils. Comm'n Apr. 22, 2009).

110. *Id.* at 3.

111. *Id.* at 2.

112. *Id.; see also* N.C. GEN. STAT. § 62-2(a)(10) (2015) (using nearly identical language to describe North Carolina energy policy).

on-site domestic needs.”¹¹³ This decision, along with *Progress Solar*, came shortly after the General Assembly enacted a statutory policy statement supporting the increased use of renewable energy in the State.¹¹⁴ Therefore, *FLS YK Farm* and *Progress Solar* seemed to signal a more permissive approach than the Utilities Commission had taken in *National Spinning*, which focused on protecting the competitive monopoly granted to electric utilities and preventing cost increases to other consumers rather than on environmental considerations.¹¹⁵

E. *W.E. Partners I, LLC* (2012)

*W.E. Partners I, LLC*¹¹⁶ addressed a peculiar situation in which one company planned to give excess electricity generated to a second company.¹¹⁷ The electricity-generating company hoped that giving the electricity away for free would prevent it from coming within the definition of “public utility[,]” which requires that a person “deliver or furnish electricity . . . to or for the public *for compensation*.¹¹⁸ Despite this attempt to avoid the plain language of the statute, the Utilities Commission held that the electricity-producing company would still be considered a public utility.¹¹⁹ The Commission noted that the two parties involved had other business dealings, beside just the proposed donation of electricity from one to the other for free.¹²⁰ The Commission stated that “it would be impossible for the Commission to identify if compensation for electricity provided ‘free of charge’ could exist in other financial agreements between an electric generator and a third party.”¹²¹ In other words, while the electricity might be provided for free, the parties could hide payments for the electricity in the pricing of other transactions between them. As summarized by the Commission:

Were the Commission to rule otherwise [and allow the provision of “free” electricity from one party to another] it would open a Pandora’s box of scenarios in which an electric generator could provide electrical services “free of charge” to a third party and build

113. *FLS YK Farm*, RET-4, SUB 0 at 1.

114. *Id.* at 2.

115. Although the Utilities Commission in *FLS YK Farm* states that its decision “should not be regarded as a precedent for any activity other than the activity involved in this case,” the ruling is instructive as to how the Commission has considered the issue of whether certain activity implicates the jurisdiction of the Commission under the definition of a “public utility.” *Id.* at 3.

116. SP-729, SUB 1 (N.C. Utils. Comm’n Sept. 17, 2012).

117. *Id.* at 2.

118. N.C. GEN. STAT. § 62-3(23)(a)(1) (2015) (emphasis added).

119. *W.E. Partners I*, SP-729, SUB 1, at 4.

120. *Id.*

121. *Id.*

in compensation to recover its costs via other arrangements, thus, avoiding the statutory definition of a public utility.¹²²

Thus, despite the parties' efforts to avoid the statutory language regarding the provision of electricity "for compensation[,]” the Utilities Commission held that the electricity-generating company would be regulated as a public utility under the proposed arrangement.¹²³ Given how peculiar such an arrangement would be, this decision illustrates the Commission's protectiveness of the competitive monopoly granted to electric utilities.

F. NC GreenPower (2015)

The Utilities Commission in *NC GreenPower*¹²⁴ approved two pilot programs that sought to increase access to renewable energy sources for schools and non-profit organizations.¹²⁵

In its Order approving the pilot programs, the Commission stated that

The Commission disagrees with [one of the commenters on the proposed pilot programs] that Chapter 62 [the Public Utilities Act] allows for power purchase agreements between utility customers and non-utility solar installers. Rather, the Commission concludes that Chapter 62 of the North Carolina General Statutes prohibits third-party sales of electricity by non-utility solar installers to retail customers.¹²⁶

The Commission did not, however, provide any discussion or analysis about how it reached this conclusion.¹²⁷

G. Analysis of Pre-NC WARN Decisions

These pre-NC *WARN* decisions by the North Carolina Utilities Commission prove difficult to reconcile. First, several of the decisions, including *Natural Power*, *W.E. Partners*, and *NC GreenPower*, failed to mention *Simpson* at all and therefore did not expressly apply any of the "regulatory circumstances" listed in *Simpson*.¹²⁸ Another decision, *FLS YK*

122. *Id.*

123. *See id.* at 5.

124. E-100, SUB 90 (N.C. Utils. Comm'n Jan. 27, 2015).

125. *Id.* at 4, 2015 WL 399728, at *3.

126. *Id.* at 3, 2015 WL 399728, at *3.

127. *See id.*

128. *See, e.g., W.E. Partners I*, SP-729, SUB 1, at 3–5, 2012 WL 4320931 (discussing the statutory definition of a "public utility" and impact of the proposal on existing utilities, rather than *Simpson* factors).

Farm, mentioned *Simpson* and the “regulatory circumstances[,]” but then did not discuss any of those circumstances in the Commission’s analysis.¹²⁹

Some of the decisions gave attention to the issue of whether the arrangement subject to review was “bargained for,” or specifically negotiated, between the parties. In *Natural Power*, *Progress Solar*, and *FLS YK Farm*, this factor seemed influential in the Commission’s conclusion that the arrangement in question did not constitute an offer of utility services “to or for the public.”¹³⁰ The focus on the individualized nature of the arrangements has a logical basis, even though *Simpson* made no specific mention of this, as the more particularized the arrangement between parties the more it would appear to be a private transaction rather than an offering “to or for the public.”¹³¹ On the other hand, the arrangements under review in *National Spinning* and *W.E. Partners* were specifically bargained-for transactions and the Commission still found them to come within the jurisdiction of the Commission as offers “to or for the public.”¹³² Therefore, the individualized, specially-negotiated nature of the transaction between parties is cited and deemed relevant by the Commission in some cases, but has not been determinative.

Also discussed in two of the decisions was whether the party receiving the service in question would remain a customer of the incumbent public utility. This is at least indirectly relevant to one of the “regulatory circumstances” enumerated by the court in *Simpson*: the “effect of non-regulation or exemption from regulation of one or more persons engaged in the industry.”¹³³ Logically, the competitive effect on the incumbent public utility is mitigated if the recipient of the service in question from an unregulated entity remains a customer of the regulated, public utility. In *Natural Power*, for example, the Commission specifically noted that Ajimonoto would remain dependent on the incumbent utility for the balance of its steam needs, despite the proposed arrangement with Natural Power.¹³⁴ This circumstance factored into the Commission’s decision that Natural Power should not be regulated as a public utility.¹³⁵

129. See *FLS YK Farm, LLC*, RET-4, SUB 0, at 2, 2009 WL 1106526, at *2 (N.C. Utils. Comm’n Apr. 22, 2009).

130. See, e.g., *id.* at 3, 2009 WL 1106526, at *2; see also N.C. GEN. STAT. § 62-3(23)(a)(1) (2015) (containing the underlying definition of utility services being offered “to or for the public”).

131. See *FLS YK Farm, LLC*, RET-4, SUB 0, at 2–3, 2009 WL 1106526, at *2 (holding that specific arrangement for provision of heat in a bargained for transaction did not meet the definition of a public utility).

132. See *supra* Sections III.B, III.E.

133. *State ex rel. Utils. Comm’n v. Simpson*, 295 N.C. 519, 524, 246 S.E.2d 753, 756 (1978).

134. Nat. Power, Inc., SP-100, SUB 1, 99 Pub. Util. Rep. 4th 340, 343 (N.C. Utils. Comm’n Dec. 22, 1988).

135. *Id.*

Remaining a customer of the incumbent public utility does not ensure a finding that the arrangement will avoid regulation by the Utilities Commission, however, as illustrated by Commission's decision in *National Spinning*. In that case, the Commission specifically noted that National Spinning's electricity needs would not be met completely through the arrangement with Leary, and that National Spinning planned to remain connected to the electric grid.¹³⁶ Nevertheless, the Commission found Leary to be a public utility because of the potential negative competitive effects on the incumbent utility that could have resulted from Leary providing some portion of National Spinning's electricity needs.¹³⁷ It is important to note that National Spinning had averaged \$3 million annually in electricity purchases from the public utility.¹³⁸ As a result, even if National Spinning remained dependent on some level of service from the public utility, the potential loss of business by the public utility with respect to this one customer was significant.

Perhaps the most perplexing of the pre-NC *WARN* decisions is *Progress Solar*. In that case, PSI proposed using a solar PV system to produce electricity, which would then be used to generate light that PSI planned to sell to the customer.¹³⁹ While the arrangement in question was a "bargained for" transaction and the customer would remain connected to the electric grid since the arrangement would provide only for lighting needs in a parking lot owned by the customer, the Commission found PSI not to come within the definition of a public utility primarily because of the General Assembly's recently-enacted public policy statements favoring renewable resources.¹⁴⁰ This deference for arrangements promoting renewable resources was again discussed in *FLS YK Farm*, decided the same year as *Progress Solar*, but was not even mentioned in the Commission's subsequent *W.E. Partners* and *NC GreenPower* decisions.¹⁴¹

The Commission in *Progress Solar* also relied on the curious contention that "the light produced by the solar lighting systems cannot be used to generate electricity and thus be used indirectly to bypass the electric utilities' exclusive franchises."¹⁴² As noted earlier, this contention fails to recognize that the solar lighting system was powered by electricity produced by Progress Solar, rather than by the electric utility, and therefore

136. Nat'l Spinning Co., SP-100, SUB 7, 1996 WL 252627 (N.C. Utils. Comm'n Apr. 22, 1996).

137. *Id.*

138. *Id.*

139. Progress Solar Investments, LLC, SP-100, SUB 24, at 1, 278 Pub. Util. Rep. 4th 525, 526 (N.C. Utils. Comm'n Nov. 25, 2009).

140. *Id.* at 3, 278 Pub. Util. Rep. 4th at 528.

141. See *supra* Sections III.C–III.F.

142. *Progress Solar*, SP-100, SUB 24, at 2, 278 Pub. Util. Rep. 4th at 527.

did in fact “indirectly . . . bypass the electric utilities’ exclusive franchises.”¹⁴³ The key factor in the *Progress Solar* decision, then, may well have been that the arrangement involved the production of electricity for a very limited purpose—to power environmentally-friendly lighting rather than for the general use of the customer. Very likely, the Commission saw this as such an uncommon arrangement that it did not present a significant competitive threat to the monopolistic position enjoyed by the public utility.

While these pre-NC *WARN* decisions by the Utilities Commission are difficult to reconcile, two lessons can be drawn from them that make the Commission’s ultimate rejection of third-party financing in *NC WARN* more understandable. First, the decisions hint at different treatment for electricity than for other utility services (such as steam or natural gas). In *Natural Power*, for example, the Commission noted that the “end product” of the proposed arrangement was steam, which “has not been regulated to the same degree” as electricity.¹⁴⁴ In *FLS YK Farms*, the Commission found relevant that the “output of the solar panels [would] be used solely to heat water belonging to [the customer],” and specifically noted that the output would not be used to generate electricity.¹⁴⁵ Finally, the puzzling statement by the Commission in *Progress Solar*, that “[u]nlike steam or piped gas, the light produced by the solar lighting systems” at issue in that case could not be used to “generate electricity,” demonstrates that arrangements involving the generation of electricity receive heightened scrutiny from the Utilities Commission.¹⁴⁶ Though not expressly stated in any of these decisions, the more rigorous regulation of electricity may be connected back to one of the “regulatory circumstances” enumerated in *Simpson*, the “nature of the industry sought to be regulated.”¹⁴⁷ The importance of uninterrupted electric service to the welfare of both individuals and the economy serves as potential justification for the regulation (and resultant prohibition) of any arrangement that might disrupt the regulated electric industry.

A second, related lesson that may be distilled from the pre-NC *WARN* decisions is the strong protection from competitive pressures granted by the Utilities Commission to electric utilities. A minimal degree of competition for electric utilities appears to be acceptable to the Commission, but

143. *Id.*

144. Nat. Power, Inc., SP-100, SUB 1, 99 Pub. Util. Rep. 4th 340, 342 (N.C. Utils. Comm’n Dec. 22, 1988).

145. FLS YK Farm, LLC, RET-4, SUB 0, at 1, 2009 WL 1106526, at *1 (N.C. Utils. Comm’n Apr. 22, 2009).

146. *Progress Solar* SP-100, SUB 24, at 3, 278 Pub. Util. Rep. 4th at 528.

147. State *ex rel.* Utils. Comm’n v. Simpson, 295 N.C. 519, 524, 246 S.E.2d 753, 756 (1978).

anything beyond this is prohibited. For example, the displacement of demand for electricity produced by the incumbent utility was deemed acceptable in *Progress Solar*, where the Commission approved the generation of electricity by a party selling eco-friendly lighting to a customer.¹⁴⁸ However, the Commission deemed a more significant reduction in demand for electricity produced by the public utility unacceptable in *National Spinning*.¹⁴⁹ There the Commission expressed concern that allowing “unregulated electric suppliers” to “cherry pick” large industrial customers would upset the bargain at the heart of utilities regulation—namely, that public utilities must serve all customers in a designated geographic area and in exchange are granted a competitive monopoly in that area.¹⁵⁰

In *National Spinning* the Commission specifically mentioned its concern over increased costs that could result for consumers who would not be able to receive service from “unregulated electric suppliers.”¹⁵¹ Those increased costs would result, however, only if the Commission, which sets the price for electric service, seeks to maintain a consistent rate of return for the regulated utility.¹⁵² So it appears from the pre-NC *WARN* decisions that some minimal degree of competition for regulated utilities is acceptable, but more than that is not allowed.

Furthermore, the degree of acceptable competition may differ from industry to industry. Going back to *Simpson*, the North Carolina Supreme Court held that an unregulated, two-way radio service that took approximately “45 [percent] of the available market” was too much competition to avoid regulation.¹⁵³ Given the significant protection afforded by the Commission to the electric industry and the relative importance of that industry to the overall economy of the State (as compared to the two-way radio service at issue in *Simpson*), it would understandably take less

148. *Progress Solar* SP-100, SUB 24, at 4, 278 Pub. Util. Rep. 4th at 528.

149. *Nat'l Spinning*, SP-100, SUB 7, 1996 WL 252627.

150. *Id.* This same “cherry picking” concern was expressed by the Florida Supreme Court in its decision to prohibit PPAs in PW Ventures, Inc. v. Nichols, 533 So.2d 281, 283 (Fla. 1988) (stating that if unregulated sales of electricity were permitted, nothing would prevent “one utility company from forming a subsidiary and raiding large industrial clients within areas served by another utility”). As a result of the decision in PW Ventures, Florida, ironically known as the “Sunshine State,” has restricted the spread of distributed solar PV systems by prohibiting PPAs. See *id.* at 283–84.

151. *Nat'l Spinning*, SP-100, SUB 7, 1996 WL 252627 (N.C. Utils. Comm'n Nov. 25, 2009).

152. See N.C. GEN. STAT. §§ 62-130(a), 133(b)(4) (2015) (establishing the Utilities Commission’s rate-setting power and directing the commission to consider rate of return in rate setting).

153. State *ex rel.* Utils. Comm'n v. Simpson, 295 N.C. 519, 525, 246 S.E.2d 753, 757 (1978).

competition before the Commission would intervene and deem a potential competitor to be a “public utility” in the context of providing electricity.¹⁵⁴

Again, though not expressly discussed in the pre-*NC WARN* decisions, this theme of allowing some, but not too much, competition relates back to one of the “regulatory circumstances” noted in *Simpson*: the “effect of non-regulation or exemption from regulation of one or more persons engaged in the industry.”¹⁵⁵ In *National Spinning*, the Commission signaled that a degree of competition that may adversely impact the utility (by causing a loss from infrastructure investment) and other consumers (by increasing the cost of electricity) should result in regulation.¹⁵⁶ On the other hand, the minimal degree of competition involved in *Progress Solar*, where the electric utility would lose business only when consumers opted for eco-friendly parking lot lighting, was apparently insignificant enough to avoid regulation.¹⁵⁷ A company proposing a transaction with the potential of creating more than minimal competition with the incumbent electric utility, however, risks characterization as a public utility by the Utilities Commission. This concern over competition seems, at least implicitly, to constitute the basis for the Utilities Commission’s decision in *NC WARN*, as described in the next Part.

IV. THE UTILITIES COMMISSION’S DECISION IN *NC WARN*

The Utilities Commission opinions described above led to the Commission’s April 2016 decision in *NC WARN* to prohibit the use of power purchase agreements in North Carolina.¹⁵⁸ In *NC WARN*, the

154. By way of comparison with the percentage of the market taken by Dr. Simpson in the *Simpson* decision, a 2008 National Renewable Energy Laboratory (NREL) analysis estimated that only about 22% of residential building roof areas in cooler climates and 27% of residential rooftops in warm/arid climates are suitable for solar. PAUL DENHOLM & ROBERT MARGOLIS, NAT’L RENEWABLE ENERGY LAB., SUPPLY CURVES FOR ROOFTOP SOLAR PV-GENERATED ELECTRICITY FOR THE UNITED STATES 4 (Nov. 2008), www.nrel.gov/docs/fy09osti/44073.pdf [<https://perma.cc/49KQ-LZU9>].

155. *Simpson*, 295 N.C. at 524, 246 S.E.2d at 756.

156. See *Nat'l Spinning*, SP-100, SUB 7, 1996 WL 252627.

157. *Progress Solar*, SP-100, SUB 24, at 4, 278 Pub. Util. Rep. 4th at 528.

158. The Utilities Commission did not specifically address the permissibility of solar leases in the *NC WARN* decision, though invited to do so by one of the intervenors in the case. See Opening Comments of the Energy Freedom Coalition of America, LLC at 14, N.C. Waste Awareness and Reduction Network, SP-100, SUB 31, 2016 WL 1572367 (N.C. Utils. Comm’n Oct. 30, 2015) (stating that “where the owner retains title to the equipment through a lease agreement and the customer has exclusive rights to enjoy the entire output of the system based on the consideration of fixed monthly payments made to the system owner—and not on consideration based on metered per kWh payments—the Commission should make clear that such arrangements do not involve the third-party sale of metered electricity.”). Some states have prohibited the use of PPAs but still allow solar leases. See Order Establishing Docket to Investigate the Development and Implementation of Net Metering Programs and Standards, 2011-AD-2, at 18–19, 2015 WL 8013234, at *11 (Miss. Pub. Serv. Comm’n Dec. 3, 2015) (allowing

Commission began its analysis by stating that “North Carolina by statute does not permit retail electric competition.”¹⁵⁹ According to the Commission, this “prohibition is based on the economic principle that provision of public utility service for compensation is a service fixed with a public interest, and competition results in duplication of investment, economic waste and inefficient service, and high rates.”¹⁶⁰ The Commission stated that the North Carolina General Assembly previously studied the possibility of opening the electric industry in the State to competition, but decided to maintain the exclusive territorial franchises based on the “calamitous” experience in California when that state opened its electricity market to competition.¹⁶¹ Thus, the Commission implicitly relied on the *Simpson* factor of the “effect of non-regulation . . . of one or more persons engaged in the industry”¹⁶² in concluding that “the NC WARN program in this case constitutes service to the public and is thus impermissible.”¹⁶³

In addition, the Commission found NC WARN subject to regulation based on the Commission’s interpretation of the statutory language defining “public utility.” As previously explained, the statutory definition contains an exception for self-generators, stating that “the term ‘public utility’ shall not include persons who construct or operate an electric generating facility, the primary purpose of which facility is for such person’s own use and not for the primary purpose of producing electricity . . . for sale to or for the public for compensation.”¹⁶⁴ The Utilities Commission reasoned that the inclusion of this exception for self-generators, and the absence of any similar exception for solar financiers, amounted to “a clear legislative declaration that the provision of electric

solar lessees to participate in net metering, but not extending net metering to PPAs); compare PW Ventures, Inc. v. Nichols, 533 So.2d 281, 282–83 (Fla. 1988) (prohibiting the use of PPAs in Florida) with FLA. ADMIN. CODE ANN. r. § 25-6.065(2)(a) (2017) (stating that “[t]he term ‘customer-owned renewable generation’ does not preclude the customer of record from contracting for the purchase, lease, operation, or maintenance of an on-site renewable generation system with a third-party under terms and conditions that do not include the retail purchase of electricity from the third party.”).

159. N.C. Waste Awareness and Reduction Network, SP-100, SUB 31, at 19, 2016 WL 1572367, at *20 (N.C. Utils. Comm’n April 15, 2016) (citing N.C. GEN. STAT. § 62-110.2 (2015) in stating that “the service area in Greensboro has been assigned exclusively to Duke, and other service areas in North Carolina have been assigned exclusively to other electric suppliers”).

160. *Id.* at 19–20, 2016 WL 1572367, at *20 (citing to State *ex rel.* Utils. Comm’n v. Carolina Tel. & Tel. Co., 267 N.C. 257, 271, 148 S.E. 2d 100, 111 (1966) for the proposition that “nothing else appearing, the public is better served by a regulated monopoly than by competing suppliers of the service.”).

161. *Id.* at 20, 2016 WL 1572367, at *20.

162. State *ex rel.* Utils. Comm’n v. Simpson, 295 N.C. 519, 524, 246 S.E.2d 753, 756 (1978).

163. N.C. Waste Awareness and Reduction Network, SP-100, SUB 31 at 20, 2016 WL 1572367, at *20.

164. N.C. GEN. STAT. § 62-3(23)(a)(1) (2015).

service for compensation to a third party . . . is service to the public and proscribed as an encroachment upon the certificated utility's exclusive service rights.”¹⁶⁵

The Commission went on to state that it is within the exclusive authority of the General Assembly—and not within the authority of the Commission—to alter the policy of territorial franchises for the sale of electric services.¹⁶⁶ It also cited another public policy concern in support of its decision to prohibit power purchase agreements, that allowing such agreements “presents the real probability that the public interest will not be well served as this will leave burdensome, less profitable service to the regulated incumbent and result in higher prices to the remaining customers for the service—the harm identified by the [Court] in *Simpson*. ”¹⁶⁷ According to the Commission, allowing third-party financing of solar PV systems would disturb the delicate balance between profit and service that the exclusive franchise for public utilities creates: “in exchange for their exclusive right to serve, the incumbent providers have an obligation to provide service to all, irrespective of the cost of doing so, at prices established through the regulatory, not the competitive, process.”¹⁶⁸

Finally, the Commission justified its prohibition against third-party financing of solar PV systems by questioning its necessity.¹⁶⁹ After all, customer-owned solar PV systems are explicitly permitted under the exception to the definition of “public utility.”¹⁷⁰ According to the Commission, “[i]t is unclear why NC WARN seeks to sell electricity to the Church rather than providing financing to the Church to be repaid through the savings NC WARN represents will be achieved from the electricity the PV facilities will generate.”¹⁷¹ The Commission explained that because NC WARN and Faith Community Church are both non-profit, tax-exempt organizations, there did not appear to be a tax justification for why NC WARN would need to retain ownership of the solar PV system, rather than simply providing financing for the church to purchase the system itself and thereby come within the self-generator exception.¹⁷²

165. *N.C. Waste Awareness and Reduction Network*, SP-100, SUB 31 at 20, 2016 WL 1572367, at *21.

166. *Id.* at 21, 2016 WL 1572367, at *21.

167. *Id.* at 21, 2016 WL 1572367, at *22.

168. *Id.*

169. *Id.*

170. *Id.* at 21, 2016 WL 1572367, at *22 (noting “the ‘customer-owned’ generation exception in G.S. 62-3(23)a.1.”).

171. *Id.*

172. *Id.* at 22, 2016 WL 1572367, at *23.

A. Analysis of the NC WARN Decision

Given the strong protection from competition granted to electric utilities under the pre-NC *WARN* decisions,¹⁷³ as well as the conclusory statement in *NC GreenPower* that the North Carolina statutes prohibit “third-party sales of electricity by non-utility solar installers to retail customers[,]”¹⁷⁴ it came as little surprise that the Commission ruled against allowing power purchase agreements in *NC WARN*. That said, there are several shortcomings to the Commission’s decision.

First, the Commission failed to offer any explanation for how its decision in *NC WARN* is consistent with its previous decisions. In particular, the Commission provided no explanation for how the *NC WARN* decision reconciles with the statutory declaration of public policy favoring the use of renewable energy that the Commission found so important in *Progress Solar* and *FLS YK Farm*.¹⁷⁵ The Commission in *NC WARN* did not even mention the pro-environmental public policy declarations enacted into statute by the General Assembly, apparently giving little or no weight to these pronouncements.¹⁷⁶

Moreover, the *NC WARN* decision is inconsistent with the Commission’s previous decision to allow the sale of solar-powered lighting in *Progress Solar*, given the fact that the arrangement in that case displaced electricity sales that would have otherwise benefitted the incumbent public utility.¹⁷⁷ Though not discussed by the Commission, one possible distinction between *NC WARN* and *Progress Solar* is that the electricity produced in *Progress Solar* was not actually sold to the customer.¹⁷⁸ Instead, the electricity generated by *Progress Solar* was used to produce light, and it was the light that was then sold to the customer.¹⁷⁹ Therefore, although *Progress Solar* involved the generation and use of electricity by a party other than the incumbent utility, the end product involved in that case was light, not electricity.¹⁸⁰ Another distinction between *Progress Solar* and *NC WARN* may be the Commission’s belief about the potential competitive impact of the activity involved in each case. The market for solar-generated

173. See *supra* Section III.G.

174. *NC GreenPower*, E-100, SUB 90, at 3, 2015 WL 399728, at *3 (N.C. Utils. Comm’n Jan. 27, 2015).

175. See *N.C. Waste Awareness and Reduction Network*, SP-100, SUB 31 at 19–22, 2016 WL 1572367, at *20–23; see also *supra* Sections III.C–D.

176. See *N.C. Waste Awareness and Reduction Network*, SP-100, SUB 31 at 19–22, 2016 WL 1572367, at *20–23 (presenting other factors in deciding to regulate the transaction at hand).

177. See *supra* Section III.C.

178. *Progress Solar Invs., LLC*, SP-100 SUB 24, at 1, 278 Pub. Util. Rep. 4th, 525, 526 (N.C. Utils. Comm’n Nov. 25, 2009).

179. *Id.*

180. *Id.*

lighting considered in *Progress Solar* is much narrower than the market for solar-generated electricity at issue in *NC WARN*.¹⁸¹ Consequently, the Commission may have taken the view that arrangements like the one in *Progress Solar* do not pose a real competitive threat to the incumbent electric utility, while the potential growth of solar PV systems if third-party financing were allowed is much greater.

In addition to its failure to adequately distinguish its previous decisions, the Utilities Commission in *NC WARN* relied on the same “cherry picking” concern expressed by the court in *Simpson*, but failed to provide any empirical data supporting that concern.¹⁸² As explained by the Commission, allowing unregulated sales of electricity through the use of power purchase agreements may result in the regulated utility losing its most profitable customers to solar financiers.¹⁸³ According to the Commission, “authorization of third-party sales presents the real probability that the public interest will not be well served as this will leave burdensome, less profitable service to the regulated incumbent and result in higher prices to the remaining customers for the service.”¹⁸⁴ However, the Commission cited no specific evidence that allowing power purchase agreements has such an effect. Unlike *Simpson*, where the unregulated offering of two-way radio service had already taken forty-five percent of the existing customer market from the incumbent utility, the Commission’s decision in *NC WARN* was based solely on theoretical speculation about the potential impact of allowing power purchase agreements.¹⁸⁵

Other states permit power purchase agreements, and those states provide a natural testing ground for assessing the Utilities Commission’s hypothesis. In a decision by the Iowa Supreme Court allowing power purchase agreements in that state,¹⁸⁶ the Iowa court addressed the potential competitive impact of unregulated solar financiers on the incumbent utility in the following terms:

If the third-party-PPA movement gets legs in Iowa, it is conceivable that demand for electricity from traditional utilities will be materially impacted in the long run. There is nothing in the record of this administrative proceeding, however, to gauge the likelihood or degree of material impact, and there was no suggestion that the integrity of the grid or economic health of regulated providers has

181. *Id.* at 2, 278 Pub. Util. Rep. 4th at 527.

182. N. C. Waste Awareness & Reduction Network, SP-100 SUB 31, at 21, 2016 WL 1572367, at *22.

183. *Id.*

184. *Id.*

185. *Id.* at 21–22, 2016 WL 1572367 at *21–22.

186. See *infra* Part V.

been adversely affected in states such as California, Nevada, Arizona, and Colorado, where third-party PPAs are not considered public utilities for purposes of regulation.¹⁸⁷

Thus, the Iowa Supreme Court did not rely on mere speculation about the potential impact of PPAs on incumbent utilities, but instead noted that no evidence had been presented about adverse effects on utilities or the electricity markets in those states that have expressly permitted PPAs.¹⁸⁸

As for impact on consumers, the average retail price of electricity over the last five years in the states listed by the Iowa Supreme Court as allowing PPAs,¹⁸⁹ compared to the national average price of electricity, is as follows, listed in dollars per kWhs:

187. *SZ Enters., LLC v. Iowa Utils. Bd*, 850 N.W.2d 441, 468 (Iowa 2014). Other states have also allowed third-party ownership of solar PV systems. *See, e.g.*, The Application of SolarCity Corp., E-20690A-09-0346, Decision No. 71795, at 71, 2010 WL 2864938 (AZ. Corp. Comm'n July 12, 2010) (noting that company's offering of on-site facility service to government and non-profit customers does not make it a public service corporation); Powerlight Corp., 02-0182, Decision & Order No. 20633, at 8, 2003 WL 22966161 (Haw. Pub. Util. Comm'n Nov. 13, 2003); Investigation and Rulemaking to Adopt, Amend, or Repeal Regulations Pertaining to Chapters 703 and 704 of the Nevada Administrative Code, 07-06024 & 07-06027, at 3-4, (Nev. Pub. Util. Comm'n Nov. 11, 2008); Declaratory Order Regarding Third-Party Arrangements for Renewable Energy Generation, Case No. 09-00217-UT, at 13-14 (N.M. Pub. Reg. Comm'n Dec. 17, 2009); Honeywell Int'l, Inc., Order No. 08-388, 1, 2008 WL 3020892 (Pub. Util. Comm'n of Or. July 31, 2008). *But see* Interpretive Statement Concerning Jurisdiction and Regulation of Third-Party Owners of New Metering Facilities, Docket No. UE-112133, at 36 (Wash. Utils. & Transp. Comm'n (July 30, 2014)) (noting that the Commission may have limited jurisdiction over certain third-party solar companies, but that the determination is fact specific and that it would consider a rulemaking to establish clear guidelines for limited regulation if the legislature did not address the issue in 2015).

188. *SZ Enters.*, 850 N.W.2d at 468.

189. *Id.*

	Arizona ¹⁹⁰	California ¹⁹¹	Colorado ¹⁹²	Nevada ¹⁹³	National Avg.
2015	\$0.1034 ¹⁹⁴	\$0.1542	\$0.0994	\$0.0948	\$0.1041
2014	\$0.1018	\$0.1515	\$0.1006	\$0.0973	\$0.1044
2013	\$0.1014	\$0.1430	\$0.0988	\$0.0903	\$0.1007
2012	\$0.0981	\$0.1353	\$0.0939	\$0.0895	\$0.0984
2011	\$0.0971	\$0.1305	\$0.0939	\$0.0897	\$0.0990
2010	\$0.0969	\$0.1301	\$0.0915	\$0.0973	\$0.0983

The chart below shows the percentage increase in the average retail price for one kilowatt of electricity in each of these states from 2010 to 2015, as compared to the national average percentage increase over the same period:

	Arizona	California	Colorado	Nevada	National Avg.
% increase	7.32	19.14	6.88	-2.57	6.00

Thus, two of the states that have permitted power purchase agreements, Arizona and Colorado, experienced price increases in the retail cost of electricity in line with the national average of six percent. Nevada saw a price decrease, and California saw a significant price increase. California's price increase has been linked in academic literature to the price of natural gas and other factors such as enactment of a renewable portfolio standard that requires fifty percent of the state's electricity to

190. The Arizona Corporation Commission determined in July 2010 that third-party financing of solar PV systems did not render the solar financier a "public service corporation." See, Decision No. 71795, at 70, 2010 WL 2864938.

191. See Cal. Pub. Util. Code § 218(b)(2) (West 2004).

192. See Renewable Energy Financing Act of 2009, ch. 157, § 11, 2009 Colo. Sess. Laws 673, 679–80 (2009).

193. The Nevada Public Utilities Commission concluded in 2008 "that third party owners of net metered renewable energy systems is legal in Nevada." See Investigation and Rulemaking to Adopt, Amend, or Repeal Regulations Pertaining to Chapters 703 and 704 of the Nevada Administrative Code, Dockets 07-06024 & 07-06027, at 3 (Nev. Pub. Util. Comm'n Nov. 11, 2008).

194. The average retail price shown is for all sectors: residential, commercial, industrial, transportation, and other. *Electricity Data Browser*, U.S. ENERGY INFO. ADMIN., <https://www.eia.gov/electricity/data/browser/#/topic/7?agg=0,1&geo=g000000001i4&endsec=vg&linechart=ELEC.PRICE.US-ALL.A&columnchart=ELEC.PRICE.US-ALL.A&map=ELEC.PRICE.US-ALL.A&freq=A&start=2001&end=2016&ctype=linechart<ype=pin&columnendpoints=1&rtyper=s&pin=&rse=0&maptyle=0> [https://perma.cc/7FN6-TMF9].

come from renewable sources by 2030.¹⁹⁵ Therefore, the price increase in California is much more likely to have resulted from factors other than the fact that power purchase agreements are permitted in the state.

In any event, the North Carolina Utilities Commission cited no empirical data in support of its concern over the potential competitive and price impacts that might result from allowing PPA.¹⁹⁶ Rather, in support of its position that allowing PPAs would have a detrimental impact on public utilities and consumers, the Commission cited to an almost-twenty-year-old study prepared by the General Assembly Study Commission on the Future of Electric Service in North Carolina, which considered the much broader question of whether to deregulate the electricity market in North Carolina.¹⁹⁷

In addition, although the Commission cited to the “cherry picking” rationale described by the court in *Simpson*,¹⁹⁸ the market for electricity is substantially different from the market for two-way radio service at issue in *Simpson*. Unlike the twenty-two users of communication services at issue in *Simpson*, the market for electricity in any particular geographic area is the entire population of that area.¹⁹⁹ From that population, only a limited number of consumers will have the potential to use solar PV-generated

195. See JONATHAN COOK, THE FUTURE OF ELECTRICITY PRICES IN CALIFORNIA: UNDERSTANDING MARKET DRIVERS AND FORECASTING PRICES TO 2040 4–5 (2013), <https://eec.ucdavis.edu/files/02-06-2014-The-Future-of-Electricity-Prices-in-California-Final-Draft-1.pdf> [<https://perma.cc/S2KE-4MQH>]; see also *Renewables Portfolio Standard (RPS)*, CAL. ENERGY COMM’N, <http://www.energy.ca.gov/portfolio/> [<https://perma.cc/WST3-JVNV>] (setting forth the history of California’s renewable portfolio standard requirements).

196. See N. C. Waste Awareness & Reduction Network, SP-100 Sub 31, 2016 WL 1572367 (N.C. Utils. Comm’n Apr. 15, 2016). The NC *WARN* decision does cite to a series of back-and-forth letters to the editor of Public Utilities Fortnightly, in which utilities executives and academics argue over the cost-shifting caused by net metering. See *id.* at 26 n.23, 2016 WL 1572367, at *27 n.23. That part of the decision simply acknowledges that debate about the value of solar exists, but does not consider any empirical data about the actual consequences of allowing power purchase agreements. *Id.*

197. See *id.* at 20 n.8, 2016 WL 1572367 at *20 n.8; see also STUDY COMMISSION ON THE FUTURE OF ELECTRIC SERVICE IN NORTH CAROLINA, REPORT TO THE 1999 GENERAL ASSEMBLY OF NORTH CAROLINA, 2000 REGULAR SESSION 1–2 (2000), <http://digital.ncdcr.gov/cdm/ref/collection/p249901coll22/id/192853> [<https://perma.cc/6UKQ-FCTC>] (“[T]he Commission has organized its work by viewing its charge as determining whether or not regulation of retail service of electricity should be changed in North Carolina to allow retail competition.”). The Study Commission recommended that “North Carolina make a commitment to enter the world of competitive retail electric service, with full retail choice of generation suppliers being available to all customers, on January 1, 2006.” *Id.* at 3. Ultimately, however, the recommendation of the Study Commission was not followed due to concerns over the effects of deregulation in California. See *Electric Industry Restructuring*, N.C. UTILS. COMM’N, <http://www.ncuc.commerce.state.nc.us/electric/electric.htm> [<https://perma.cc/JX33-W96S>].

198. State *ex rel.* Utils. Comm’n v. Simpson, 295 N.C. 519, 525, 246 S.E.2d 753, 757 (1978).

199. See *id.* at 525, 246 S.E.2d at 757 (describing the extremely limited market for two-way radio services in Cleveland County, North Carolina).

electricity, given that some locations are unsuitable for the service due to a lack of direct sunlight or shared roof space, such as in an apartment complex.²⁰⁰ Moreover, practically all those who may be able to use solar PV-generated electricity will remain connected to the regulated electric grid, since very few consumers are able to satisfy all of their electricity needs exclusively through solar PV systems.²⁰¹ Thus, while the Commission acknowledged the differences between the two-way radio market in *Simpson* and the market for electric service at issue in *NC WARN*,²⁰² it did not explain why it chose to ignore those differences in reaching its conclusion that allowing PPAs would have a detrimental impact on both the public utility and its consumers.

Finally, although the Commission did not address the “regulatory circumstances” from *Simpson* explicitly, the protective approach that the Commission took toward the incumbent utility is presumably based, at least in part, on one of these circumstances: the “nature of the industry.”²⁰³ The stability of the electric industry is essential to economic advancement, and therefore the Commission understandably proceeds with due care when considering changes that might affect the industry. That said, the statement by the Utilities Commission in *NC WARN* that “North Carolina by statute does not permit retail electric competition”²⁰⁴ appears to prohibit *any* activity that would potentially impact the incumbent utilities’ competitive monopoly, even if that activity furthers the General Assembly’s stated goals of using the “entire spectrum of demand-side options” to assure the “facilities necessary to meet future growth” and the goal of “diversify[ing] the resources used to reliably meet the energy needs of consumers in the State.”²⁰⁵ The Utilities Commission’s overly protective approach prohibiting any competition for the public utilities risks stifling innovation within the electric industry.

As mentioned earlier, other states have allowed innovations such as third-party financing of solar PV systems without the adverse consequences feared by the Utilities Commission. The next section examines the 2014

200. As previously stated, a 2008 National Renewable Energy Laboratory (NREL) analysis estimated that only 1 in 5 residential roofs are likely to be suitable for solar systems. DENHOLM & MARGOLIS, *supra* note 154, at 4.

201. This is due to the fact that the production of electricity through a solar PV system is variable on weather and ceases outside of daylight hours. See *Solar*, INST. FOR ENERGY RES., <http://instituteforenergyresearch.org/topics/encyclopedia/solar/> [https://perma.cc/X72V-RP5Y].

202. N. C. Waste Awareness & Reduction Network, SP-100 Sub 31, at 20, 2016 WL 1572367, at *20–21 (N.C. Utils. Comm’n Apr. 15, 2016).

203. *Id.* at 18, 2016 WL 1572367 at *19.

204. *Id.* at 20, 2016 WL 1572367, at *20.

205. N.C. GEN. STAT. § 62-2(a) (2015).

decision by the Iowa Supreme Court in *SZ Enterprises*, which allowed the use of power purchase agreements in that state.

V. THE IOWA SUPREME COURT DECISION IN *SZ ENTERPRISES, LLC v. IOWA UTILITIES BOARD*²⁰⁶

The arrangement at issue in *SZ Enterprises, LLC v. Iowa Utilities Board* was very similar to the one between NC WARN and Faith Community Church. SZ Enterprises, doing business under the name Eagle Point Solar, agreed to install and maintain a PV solar electric generating system on a building owned by the city of Dubuque.²⁰⁷ Dubuque sought to “develop renewable energy for the use of the city[,]”²⁰⁸ consistent with “the policy of [the] state to encourage the development of alternate energy production facilities . . . in order to conserve [Iowa’s] finite and expensive resources and to provide for their most efficient use.”²⁰⁹ Under the power purchase agreement between Eagle Point and Dubuque, “[t]he city would purchase the full electric output of Eagle Point’s solar power generation facility on a per kWh basis, which escalated at a rate of three percent annually.”²¹⁰ The PPA also provided that Eagle Point would own any renewable energy credits associated with the generation system, “but would credit to the city one third of any revenues received from the sale of those credits.”²¹¹

As with the arrangement between Faith Community Church and NC WARN, the PV system owned and installed by Eagle Point for the city of Dubuque “would be on the customer side of the electric meter provided by the city’s electric utility, Interstate Power.”²¹² This meant that “electricity generated by the system would not pass through Interstate Power’s electric meter.”²¹³ Moreover, the PV system would not fulfill all of the electrical needs of the city building where the system was to be located.²¹⁴ Consequently, the building “would remain connected to the electric grid and [the city would] continue to purchase electric power from Interstate Power to meet its remaining needs at the premises.”²¹⁵

Confronting the Iowa Supreme Court was the issue of whether the terms of the proposed PPA rendered Eagle Point a “public utility” under

206. 850 N.W.2d 441 (Iowa 2014).

207. *Id.* at 444–5.

208. *Id.* at 444.

209. *Id.* at 447 (citing IOWA CODE § 476.41 (2017)).

210. *Id.* at 444.

211. *Id.* at 444–45.

212. *Id.* at 445.

213. *Id.*

214. *Id.*

215. *Id.*

Iowa law.²¹⁶ If so, the “proposed arrangement with the city would be an unlawful incursion into the exclusive service territory of Interstate Power[,]” the city’s incumbent electric utility.²¹⁷ In determining whether Eagle Point was a public utility, the court started with the statutory definition, which, in language almost identical to the equivalent North Carolina statute, defines “public utility” as “any person, partnership, business association, or corporation, domestic or foreign, owning or operating any facilities for [among other things] *furnishing . . . electricity to the public for compensation.*”²¹⁸ Under Iowa law, a public utility that furnishes *electricity* (in contrast to other regulated commodities or services such as gas, water, or communication services) is further defined as an “electric utility.”²¹⁹ As previously stated, Iowa provides exclusive territorial franchises for its electric utilities. As a result, just as in *NC WARN*, the Iowa Supreme Court in *SZ Enterprises* had to determine whether Eagle Point would, under the PPA, own or operate any facilities for furnishing electricity “to the public for compensation.”²²⁰ If so, this would be prohibited under the incumbent electric utility’s exclusive territorial franchise.

In determining whether Eagle Point was offering to furnish electricity “to the public,” the Iowa Supreme Court held that a company may come within this phrase even though it does not “directly or indirectly hold itself out as providing service to all comers.”²²¹ Rather, sales “to the public,” as that phrase has been interpreted under Iowa law, means “sales to sufficient of the public *to clothe the operation with a public interest* and does not mean willingness to sell to each and every one of the public without

216. *Id.* In addition, if the court determined Eagle Point not to be a public utility, it would need to also consider whether the arrangement rendered Eagle Point an “electric utility[.]” *id.*, defined under Iowa law as “includ[ing] a public utility furnishing electricity as defined in section 476.1 and a city utility as defined in section 390.1.” IOWA CODE § 476.22 (2017). After determining that Eagle Point was not a public utility, the *SZ Enterprises* court also found that the company was not an electric utility. *SZ Enters.*, 850 N.W.2d at 470.

217. *SZ Enters.*, 850 N.W.2d at 445 (citing IOWA CODE § 476.25(3) (2017)). Under the Iowa Code, “[a]n electric utility shall not serve or offer to serve electric customers in an exclusive service area assigned to another electric utility, nor shall an electric utility construct facilities to serve electric customers in an exclusive service area assigned to another electric utility.” IOWA CODE § 476.25(3). As explained in the Iowa statutes, the exclusive-territory provision is designed “to encourage the development of coordinated statewide electric service at retail, to eliminate or avoid unnecessary duplication of electric utility facilities, and to promote economical, efficient, and adequate electric service to the public.” *Id.* § 476.25 (2017).

218. IOWA CODE § 476.1(3) (emphasis added); *see also* N.C. GEN. STAT. § 62-3 (2015).

219. IOWA CODE § 476.22 (2017).

220. *SZ Enters.*, 850 N.W.2d at 460 (citing IOWA CODE § 476.1).

221. *Id.* at 454; *see also id.* at 455 (rejecting the “rigid test” used in a line of Colorado cases for determining whether a service or good is offered “to the public”).

discrimination.”²²² Whether a specific activity, like Eagle Point’s furnishing of electricity to Dubuque (and future potential customers) under the terms of a PPA, constituted sales “to sufficient of the public to clothe the operation with a public interest,”²²³ required the court to “examine the facts of [the] particular transaction on a case-by-case basis to determine whether the transaction cries out for public regulation.”²²⁴ To undertake this examination, the *SZ Enterprises* court stated that eight factors first set forth in an Arizona Supreme Court decision, known as the *Serv-Yu* factors, “provide a reasoned approach when considering the question of whether the activity involved is sufficiently clothed with the public interest to justify regulation.”²²⁵ In summary, the Iowa Supreme Court reasoned that sales of electricity are “to the public” if the sales are “to sufficient of the public to clothe the operation with a public interest,”²²⁶ which may be assessed by applying the so-called *Serv-Yu* factors, first laid out by the Arizona Supreme Court in *Natural Gas Service Co. v. Serv-Yu Cooperative, Inc.*²²⁷

The *Serv-Yu* factors, as described by the Iowa Supreme Court in *SZ Enterprises*, are: (1) “a pragmatic assessment of what is actually happening in the transaction[;]²²⁸ (2) whether the transaction is dedicated to public use[;]²²⁹ (3) an examination of the purpose of the entity involved in the transaction, as set forth in the entity’s articles of incorporation[;]²³⁰ (4) whether the transaction amounts to “an indispensable service that ordinarily cries out for public regulation[;]²³¹ (5) whether the entity involved in the transaction is “intending to monopolize the territory with a public service commodity[;]²³² (6) whether the entity accepts “substantially all requests for service[;]²³³ (7) whether the entity instead reserves the right to

222. *Id.* at 455, 474 (emphasis added) (citing *Iowa State Commerce Comm’n v. N. Nat. Gas Co.*, 161 N.W.2d 111, 115 (Iowa 1968)). This is the same standard cited by the North Carolina Supreme Court in *Simpson. State ex rel. Utils. Comm’n v. Simpson*, 295 N.C. 519, 524, 246 S.E.2d 753, 757 (1978). Rather than applying the same four “regulatory circumstances” as the *Simpson* court, *id.* at 524, 246 S.E.2d at 756–57, the Iowa Supreme Court applied the eight factors identified in the *Serv-Yu* case, as discussed below. *SZ Enters.*, 850 N.W.2d at 447, 470.

223. *SZ Enters.*, 850 N.W.2d at 455.

224. *Id.* at 466.

225. *Id.* (citing *Nat. Gas Serv. Co. v. Serv-Yu Coop., Inc.*, 219 P.2d 324, 325–26 (Ariz. 1950)).

226. *Id.* at 455.

227. 219 P.2d 324 (Ariz. 1950).

228. *SZ Enters.*, 850 N.W.2d at 466.

229. *Id.* at 467.

230. *Id.* at 458.

231. *Id.* at 467.

232. *Id.* at 448 (quoting *Nat. Gas Serv. Co. v. Serv-Yu Coop., Inc.*, 219 P.2d 324, 326 (Ariz. 1950)).

233. *Id.* (quoting *Nat. Gas Serv. Co.*, 219 P.2d at 326).

discriminate in whether or not to provide the service[;] and (8) an examination of the “actual or potential competition” between the entity providing the service and the public utility.²³⁴ In *SZ Enterprises*, the Iowa Supreme Court proceeded through these factors one-by-one and ultimately concluded that “the balance of factors point away from a finding that the third-party PPA for a behind-the-meter solar generation facility is sufficiently ‘clothed with the public interest’ to trigger regulation.”²³⁵

While the *SZ Enterprises* court moved summarily through some of the *Serv-Yu* factors,²³⁶ other factors received more extensive consideration. With respect to the first factor, “a pragmatic assessment of what is actually happening in the transaction[,]” the court said that the PPA could be “characterized as a sale of electricity or a method of financing a solar rooftop operation,” and that “[n]either characterization is inaccurate.”²³⁷ Regardless of its characterization, however, the court stated that “most importantly” the transaction “is an arms-length transaction between a willing buyer and a willing seller.”²³⁸ As such, “[t]here is no reason to suspect any unusual potential for abuse[,]” which would have served as a justification for regulation.²³⁹ Rather, the court stated that “[f]rom a consumer protection standpoint, there is no reason to impose regulation on this type of individualized and negotiated transaction.”²⁴⁰ The court further stated in its discussion of the first *Serv-Yu* factor that what was happening as a result of the PPA could have been accomplished without legal controversy through self-financing or through a “standard lease[,]” pursuant to which Eagle Point would lease the solar PV system to the city and the city would use the leased equipment to generate its own electricity.²⁴¹

That the use of a solar PV system could be achieved through self-financing or through one form of third-party financing (leasing the system) but not through another (financing the same system through a PPA) appears to have been too much for the *SZ Enterprises* court to accept. Given the permissibility of a lease arrangement, the court stated that “the actual issue

234. *Id.* at 467.

235. *Id.* at 468.

236. The third factor in particular does not receive consideration from the *SZ Enterprises* court in their analysis. *See id.* at 466–68.

237. *Id.* at 466.

238. *Id.*

239. *Id.*

240. *Id.*

241. *Id.* According to the court, “the [Iowa Utilities Board] would not seek to regulate behind-the-meter solar installations that are owned by the host or which operate pursuant to a standard lease.” *Id.* The court also said that Eagle Point and the City of Dubuque had in fact converted their PPA into a lease “in order to remove the shadow of the legal cloud raised by this case.” *Id.* at 466, n.6.

here is not the supplying of electricity through behind-the-meter solar facilities, but the method of financing.”²⁴² Consequently, the court ultimately treated a PPA as just another method for consumers to reduce their dependence on electric utilities, much like high-efficiency windows, insulation, and LED lighting.²⁴³ Self-financed solar production is permitted; solar production through a traditional lease arrangement is permitted (at least in Iowa); and energy conservation measures such as those listed above, all of which reduce consumption of utility-generated electricity, are also permitted.²⁴⁴ That being the case, the court found it difficult to justify prohibiting PPAs, the preferred financing method for companies and individuals who cannot afford to self-finance or do not want to assume the risk associated with a solar lease arrangement.

The court also discussed the fourth *Serv-Yu* factor, concluding that the commodity at issue in the case, on-site, solar-generated electricity, was “not an indispensable service that ordinarily cries out for regulation.”²⁴⁵ The vast majority of solar customers remain connected to the grid.²⁴⁶ This is an important point for two reasons. First, unlike the situation with centralized electricity-generating facilities of the type traditionally operated by public utilities, if there is a failure of an on-site solar PV system the customer continues to receive electricity through the grid system.²⁴⁷ The risk of failure is limited to the individual PV system, rather than to a more widespread segment of the electric grid. Second, unlike the traditional public utility, which is often the only provider of an essential service, “if Eagle Point decides not to engage in a transaction with a customer, the customer is not left high and dry, but may seek another vendor while continuing to be served by a regulated electric utility.”²⁴⁸ Consumers have traditionally been at a bargaining disadvantage vis-à-vis public utilities because the consumers absolutely must have the service provided by the public utility and the public utility is the exclusive provider of that service.²⁴⁹ This justification for regulation does not apply in the context of on-site solar PV systems since the consumer’s need for the essential service

242. *Id.* at 466.

243. *Id.* at 467 (stating that the solar panel “installation is no more dedicated to public use than the thermal windows or extra layers of insulation in the building itself”).

244. *Id.*

245. *Id.*

246. *Id.* (“[a]ll of Eagle Point’s customers remain connected to the public grid.”).

247. *Id.*

248. *Id.*

249. *Id.* (“There is simply nothing in the record to suggest that Eagle Point is a six hundred pound economic gorilla that has cornered defenseless city leaders in Dubuque.”).

is already met by the public utility, and the use of an on-site solar PV system is instead a discretionary decision by the system host.²⁵⁰

Finally, with respect to the last *Serv-Yu* factor, the “actual or potential competition with other corporations whose business is clothed with the public interest[,]”²⁵¹ the court acknowledged that “[i]f the third-party-PPA movement gets legs in Iowa, it is conceivable that demand for electricity from traditional utilities will be materially impacted in the long run.”²⁵² This competition, and the resulting price increase for consumers who may not be able to receive service from the unregulated service provider, was the primary rationale for the North Carolina Supreme Court’s decision in *Simpson*, as well as the North Carolina Utilities Commission’s decision in *NC WARN*. As stated in *Simpson*, “unregulated radio services might focus on classes which are easier and more profitable to serve. The result would be to leave burdensome, less profitable service on the regulated portion resulting inevitably in higher prices for the service.”²⁵³

As previously explained in the discussion of *Simpson*, however, a statewide solar PV market is different in important ways from the Cleveland County market for two-way radio service at issue in that case. The two-way radio market at issue in *Simpson* was so small that the court could point to the substantial impact that an unregulated provider of communication services was already having on the market.²⁵⁴ In contrast, the Utilities Commission in *NC WARN* cited and discussed no empirical evidence of the effect that permitting PPAs would have on the market for electricity. Despite having no such empirical evidence, the North Carolina Utilities Commission chose to prohibit PPAs.²⁵⁵ In contrast, the Iowa Supreme Court in *SZ Enterprises* treated the lack of any evidence of a negative impact in states that have allowed PPAs as offering “no suggestion that the integrity of the grid or economic health of regulated providers has been adversely affected” by the use of power purchase agreements.²⁵⁶

A. *The SZ Enterprises Decision in Relation to NC WARN*

Up to a point, North Carolina law and Iowa law track one another in determining what activities result in a company being treated as a “public

250. See *infra* Part V.

251. *SZ Enters.*, 850 N.W.2d at 458.

252. *Id.* at 468.

253. State *ex rel.* Utils. Comm’n v. Simpson, 295 N.C. 519, 525, 246 S.E.2d 753, 757 (1978).

254. *Id.*

255. N. C. Waste Awareness & Reduction Network, SP-100 Sub 31, at 30, 2016 WL 1572367, at *31 (N.C. Utils. Comm’n Apr. 15, 2016).

256. *SZ Enters.*, 850 N.W.2d at 468.

utility.” The statutory language defining a public utility is virtually identical in both states. North Carolina defines a public utility as a “person . . . owning or operating in this State equipment or facilities for . . . furnishing electricity . . . for the production of light, heat or power to or for the public for compensation”²⁵⁷; Iowa defines a public utility as “any person . . . owning or operating any facilities . . . for furnishing electricity to the public for compensation.”²⁵⁸ In addition, the North Carolina Supreme Court in *Simpson* expressed agreement with an earlier Iowa Supreme Court decision stating that the determination of what constitutes a public utility requires some degree of flexibility and should consider whether there are “sales to sufficient of the public to clothe the operation with a public interest.”²⁵⁹ According to *Simpson*, this “ad hoc” approach taken by the Iowa Supreme Court is the “type of flexible interpretation that is necessary to comport legislative purpose with the variable nature of modern technology.”²⁶⁰

The law in North Carolina and the law in Iowa diverge, however, in the factors considered in assessing whether a certain activity renders the entity performing that activity a public utility. North Carolina law applies the four “regulatory circumstances” first set forth in *Simpson*; Iowa law applies the eight *Serv-Yu* factors. Consideration of those different sets of factors provides insight as to why the North Carolina Utilities Commission and the Iowa Supreme Court reached different conclusions about whether power purchase agreements trigger regulation as a public utility.

The first regulatory circumstance identified by the North Carolina Supreme Court in *Simpson* was the “nature of the industry sought to be regulated.”²⁶¹ The *Serv-Yu* factors do not include anything comparable. Of course, the electric industry plays an essential role in modern life, both at the individual level and at the broader societal level. Our economy and our standard of living are based on access to reliable and affordable electricity. Thus, the “nature of the industry sought to be regulated,” when considering the electric industry, is justifiably characterized as indispensable.²⁶²

257. N.C. GEN. STAT. § 62-3(23)(a)(1) (2015).

258. IOWA CODE § 476.1 (2017).

259. *Simpson*, 295 N.C. at 524, 246 S.E.2d at 757 (quoting Iowa State Commerce Comm’n v. N. Nat. Gas Co., 161 N.W.2d 111, 115 (Iowa 1968)).

260. *Id.*

261. *Id.* at 524, 246 S.E.2d at 756.

262. The indispensability of electricity has been recognized for generations, as stated in 1932 by then candidate for President Franklin Roosevelt, “[e]lectricity is no longer a luxury. It is a definite necessity.” Franklin Roosevelt, Presidential Candidate, Campaign Address in Portland, Oregon on Public Utilities and Development of Hydro-Electric Power (Sept. 21, 1932) <http://www.presidency.ucsb.edu/ws/?pid=88390> [<https://perma.cc/X4A3-V89T>].

It is important to note, however, that the *Simpson* case did not involve an issue related to the electric industry, and therefore the North Carolina Supreme Court did not illustrate how to apply this factor in the context of the electric industry. Subsequent Utilities Commission decisions like *National Spinning* and *W.E. Partners* have given a substantial degree of protective treatment to the electric industry.²⁶³ These decisions signal a clear reluctance by the Utilities Commission to allow activity that has even the potential to adversely affect electric utilities, and the Utilities Commission can point to the first *Simpson* factor, the “nature of the industry[.]” to justify this extremely protective treatment.²⁶⁴ The Commission’s decisions have not always expressly stated this rationale as the basis for the special treatment given to the electric industry.

This protective approach for the electric industry, based on the “nature of the industry sought to be regulated,” may have the effect of slowing innovation in the electric industry.²⁶⁵ The attention given to the “nature of the industry” also prevents the case-by-case assessment for determining whether regulation that the North Carolina Supreme Court claimed to espouse in *Simpson* is appropriate. No matter what the specific facts involved in a particular case, the nature of the electric industry remains the same, essential to our way of life and our economy, and consequently there will always be a justification for regulating (*i.e.*, preventing) proposed activities in the electric industry.

In contrast, the *Serv-Yu* factors applied by the Iowa Supreme Court in *SZ Enterprises* do not contain a factor that considers the “nature of the industry sought to be regulated.” Instead, one of the *Serv-Yu* factors, which does not have an analog under *Simpson*, seeks to determine “[w]hat the corporation actually does.”²⁶⁶ This factor examines the nature of the activity undertaken by the entity, rather than the nature of the industry in which that entity acts. *SZ Enterprises* illustrates this distinction. Ultimately, the court in *SZ Enterprises* found that while Eagle Point was selling electricity to the City of Dubuque under the power purchase agreement, what the company was really doing was providing a mechanism for the city to finance a solar PV system.²⁶⁷ And although Eagle Point was operating within the electric industry by providing financing for solar PV systems, the nature of that industry itself was not relevant to the determination of whether the

263. See Nat'l Spinning Co., SP-100, SUB 7, 1996 WL 252627 (N.C. Utils. Comm'n Apr. 22, 1996); W.E. Partners I, LLC, SP-729, SUB 1, at 2, 2012 WL 4320931 (N.C. Utils. Comm'n Sept. 17, 2012).

264. *Simpson*, 295 N.C. at 524, 246 S.E.2d at 756.

265. *Id.*

266. *SZ Enters. v. Iowa Utils. Bd.*, 850 N.W.2d 441, 458 (listing the eight *Serv-Yu* factors).

267. *Id.* at 466 (stating that “the actual issue here is not the supplying of electricity through behind-the-meter solar facilities, but the method of financing”).

particular activity engaged in by Eagle Point should be regulated by the Iowa Utilities Board. What was relevant (along with the other *Serv-Yu* factors) was that the sales of electricity from Eagle Point to the City of Dubuque was simply facilitating the city's ability to afford a solar PV system.²⁶⁸ That, the *SZ Enterprises* court found, did not weigh against regulation by the Iowa Utilities Board.²⁶⁹

An advantage to the approach taken by the Iowa Supreme Court in applying the *Serv-Yu* factors over the *Simpson* factors applied in North Carolina is that the approach taken in Iowa allows for a greater degree of innovation while still considering whether the proposed activity will adversely affect the market in question. The *Simpson* factors include the "effect of non-regulation or exemption from regulation of one or more persons engaged in the industry."²⁷⁰ Likewise, the *Serv-Yu* factors include the "[a]ctual or potential competition with other corporations whose business is clothed with the public interest."²⁷¹ Thus, both tests allow for the protection of the market and the public utility operating in that market, but the North Carolina approach unduly constrains developments in that market by focusing on the general nature of the industry involved.

Despite the various shortcomings to the *NC WARN* decision described in Part IV, it was arguably decided correctly by the Utilities Commission in light of the controlling *Simpson* case, and specifically in light of the first regulatory factor from *Simpson*. That said, whether the result in *NC WARN* has a solid theoretical foundation is another question. The next section examines the issue of whether PPAs should trigger regulation based on fundamental policy considerations.

VI. POLICY CONSIDERATIONS IN REGULATING SOLAR FINANCIERS

Whether one prefers the result reached by the Iowa Supreme Court allowing power purchase agreements or the North Carolina Utilities Commission prohibiting them may well turn on one's views on the seriousness of climate change and the urgency for increasing the use of clean energy to slow global warming. Differing views on those issues may prove difficult to bridge, but the more general question of when the Utilities Commission should exert its jurisdictional authority may be considered separate from the context of one's views on climate change. Courts and policy-makers have traditionally cited several policy reasons for regulating public utilities. With respect to electric utilities, these policy

268. *See id.* at 466–68.

269. *Id.*

270. *Simpson*, 295 N.C. at 524, 246 S.E.2d at 756.

271. *SZ Enters.*, 850 N.W.2d at 458.

reasons have typically included: ensuring the reliable delivery of an essential commodity; protecting consumers from high prices; and avoiding waste through the unnecessary duplication of capital assets.²⁷² As explained by the National Renewable Energy Laboratory:

Retail electricity markets in the United States remain regulated in most states in part to protect consumers (rates and reliability) and to ensure a highly functioning electric grid. If anyone could freely connect a generator to the existing grid, the electricity supply could become volatile and unsafe, which could cause congestion, blackouts, and maintenance concerns. Additionally, regulation of these markets prevents unnecessary duplication of assets such as transmission and distribution facilities. Regulated investor-owned utilities are given monopoly status in most service territories to prevent such problems. By having a single entity control the system, a utility can balance constantly changing supply and demand to ensure reliability and keep the electricity flow on the grid optimized and safe.²⁷³

These same justifications for regulation have been recognized by various courts and administrative bodies. In *SZ Enterprises*, for example, the Iowa Supreme Court acknowledged that certain commodities, such as electricity, “may be essential to commerce or everyday life,” and therefore “the continued provision of the service on a reliable basis may trigger a public interest” justifying regulation.²⁷⁴ Similarly, the Supreme Court of Missouri has explained the theoretical justifications for regulating utilities as follows:

[T]o preserve and promote those services which are indispensable to large segments of our population, and to prevent excessive and discriminatory rates and inferior service where the nature of the facilities used in providing the service and the disparity in the relative bargaining power of a utility ratepayer are such as to prevent the ratepayer from demanding a high level of service at a fair price without the assistance of governmental intervention in his behalf.²⁷⁵

272. See KATHERINE KOLLINS, BETHANY SPEER, & KARLYNN CORY, NAT'L RENEWABLE ENERGY LAB. SOLAR PV PROJECT FINANCING: REGULATORY AND LEGISLATIVE CHALLENGES FOR THIRD-PARTY PPA SYSTEM OWNERS 4 (Feb. 2010), <http://www.nrel.gov/docs/fy10osti/46723.pdf> [<https://perma.cc/RPX2-ZLZP>].

273. *Id.*

274. *SZ Enters.*, 850 N.W.2d at 466.

275. *Petrolane-Ariz. Gas Serv. v. Ariz. Corp. Comm'n*, 580 P.2d 718, 720 (1978) (citing *In re Gelbach Petroleum Co.*, 56 Pub. Util. Rep. 3d 207, 213 (Mo. 1964); see also *Trico Elec. Coop., v. Corp. Comm'n of Ariz.*, 339 P.2d 1046, 1051 (1959) (stating that the “trial court was justified in finding that convenience and necessity required its regulation to prevent competition with

The traditional rationales for regulating electric utilities do not apply, however, to the provision of electricity under a power purchase agreement. First, practically all consumers who install solar PV systems remain connected to the electric grid.²⁷⁶ This may be due to the variable and unpredictable production of electricity by solar PV systems at any particular moment in time²⁷⁷ or due to the cap on the amount of tax incentives available for the installation of a solar PV system.²⁷⁸ Whatever the reason for not completely displacing the consumer's need for electricity from the grid, the electricity from a solar PV system used by a consumer still connected to the grid should be viewed as a cost-effective and environmentally-beneficial supplement to grid-supplied electricity, rather than as the sole source of an essential component of daily life.²⁷⁹ The consumer does not need to depend on the electricity produced by the solar PV system, since electricity from the grid remains available at all times. Consequently, while the provision of electricity through the grid is unquestionably an indispensable service to the public, the decision to supplement grid-supplied electricity with electricity from a solar PV system amounts to a discretionary purchase by the consumer. This is, of course, evidenced by the fact that a very small percentage of the overall population

public utilities under the principle of regulated monopolies to prevent waste and duplication in service.").

276. "Most residential systems rely on the electricity grid (rather than a battery) to manage the mismatch between their building's load profile and their PV system's generation profile, using net metering to compensate them for electricity fed back into the grid." FELDMAN & BOLINGER, *supra* note 17, at 18.

277. Simply put, if the sun is not shining, the solar PV system is not generating electricity. To hedge against "rainy days," most consumers remain connected to the traditional electric grid.

278. In North Carolina, for example, the state income tax credit for the purchase of a solar PV system (before its expiration at the end of 2015) was capped at \$10,500. N.C. GEN. STAT. § 105-129.16A(c)(2)(d) (2015); see also N.C. DEP'T OF REVENUE GUIDELINES FOR DETERMINING THE TAX CREDIT FOR INVESTING IN RENEWABLE ENERGY PROPERTY 12 (Oct. 1, 2014) http://www.dorcnc.com/taxes/corporate/renewable_energy_credits.pdf [https://perma.cc/6TRD-N7AY]. Therefore, purchasers of solar PV systems in North Carolina were economically motivated to limit the size (and therefore the potential output) of the systems they purchased.

279. Some proponents of distributed solar have argued that because on-site solar PV systems provide electricity on the "customer side" of the meter, meaning that the customer consumes the electricity from the solar PV system before drawing any electricity from the grid, these systems should be considered and treated equivalent to other energy efficiency measures that operate to reduce the amount of electricity consumed from the grid, such as high-efficiency bulbs or weather-proof windows. The comparison to other energy saving measures breaks down, however, because solar PV systems produce electricity, rather than just reducing the need for electricity. In addition, solar PV systems have the potential to feed electricity into the grid, allowing for the possibility of net metering. Feeding electricity into the grid implicates several considerations that do not apply to other energy saving measures (such as safety, compatibility, and economic issues). For further discussion, see NAT'L RENEWABLE ENERGY LAB. CONNECTING YOUR SOLAR ELECTRIC SYSTEM TO THE UTILITY GRID, (July 2002) <http://www.nrel.gov/docs/fy02osti/31687.pdf> [https://perma.cc/BEG4-ZSK6].

receives electricity from on-site solar PV systems.²⁸⁰ Thus, the traditional justification for regulating an “indispensable service” does not apply to solar PV systems when the consumer remains connected to the electric grid.

The second traditional justification for regulation, protection of consumers from overpricing, is also inapplicable to solar PV systems. Due to the high capital costs associated with generation, transmission, and distribution of electricity to large numbers of consumers, and the resulting barrier to competition resulting from these costs, electric utilities have historically been considered natural monopolies.²⁸¹ A natural monopoly which sells a good or service essential to modern life, like electricity, has disproportionate bargaining power relative to individual consumers. The result of this disparity in bargaining power is the potential for the natural monopoly to overprice the good or service. Government regulation, and price regulation in particular, has served as an effective check on this potential abuse in pricing.

That disparity in bargaining power and the resulting potential for overpricing does not apply to distributed solar, however, for several reasons. These include the non-essential nature of on-site, solar-generated electricity; the lower cost of entry for suppliers in the distributed solar market; and the competition within that market. Because most users of distributed solar electricity remain connected to the grid, and even those who do not remain connected have the option to do so, solar PV systems do not fit the natural monopoly model. An individual consumer may choose to receive some, or even all, of the consumer’s electricity needs from an on-site solar PV system, but if that consumer elects otherwise or finds the cost of solar-generated electricity to be too high, the grid provides an available source of electricity to meet the consumer’s needs. Put differently, the decision to enter into a power purchase agreement is entirely elective, unlike the decision to receive electric service generally.

In addition, relative to the exceptionally high cost of building generating stations and systems for transmitting and distributing electricity over a large area like public utilities do, the cost of entering the on-site solar PV market is substantially lower. As evidenced by the *NC WARN* case, a supplier of solar PV systems may enter the market without the

280. The Solar Energy Industries Association estimates that the U.S. reached one million solar installations nationwide in 2016. See *Million Solar Strong*, SOLAR ENERGY INDUSTRIES ASSOCIATION, <http://www.seia.org/million-solar-strong> [https://perma.cc/8HC6-7PEC].

281. See Douglas Gegax & Kenneth Nowotny, *Competition and the Electric Industry: An Evaluation*, 10 YALE J. ON REG. 63, 75 (1993) (concluding that electric utilities are multiproduct natural monopolies).

extensive capital necessary to construct large-scale electric plants.²⁸² Simply stated, distributed solar is not a natural monopoly because of the availability of electricity from the grid and the lower barrier to entry into the distributed solar market. This lower barrier to entry allows for robust competition among solar PV system suppliers, at least in states that allow attractive financing options like power purchase agreements. Therefore, the potential for overpricing is checked by the traditional grid, the lower barrier to entry, and the resulting competition within the distributed solar market.

The final traditional justification for regulation of utilities is the avoidance of unnecessary and wasteful duplication of capital assets. This also has no relevance when considering distributed solar PV systems. Unlike a competing electric utility, which would have to replicate a centralized generation facility, as well as the means for transmission and distribution of the electricity, distributed solar is located on-site and behind the meter of the consumer. There simply is no duplication of the capital assets used by the incumbent electric utility in producing and transmitting electricity. In fact, given that excess electricity generated by distributed solar PV systems is fed back into the grid through net metering programs, the regulated utility's capital assets may be more fully utilized with more distributed solar PV systems in operation. Since solar production is at its peak on sunny days, when demand for electricity is usually at its highest, the feeding of excess electricity into the grid by distributed solar PV systems may actually increase efficiency by reducing the need for the construction of additional generation facilities by the regulated utility.²⁸³

Thus, the three traditional justifications for regulating an activity—ensuring reliable service, protecting consumers from over-pricing, and avoiding waste—do not apply to the solar PV market. Moreover, other policy considerations weigh in favor of allowing PPAs. One such consideration is the security of the electric system from external threats, particularly cyber-attack or terrorist threats. Regulation of a centralized system of electricity generation, transmission, and distribution is warranted, in part, to reduce the vulnerability of the system from security risks. If the

282. See N. C. Waste Awareness & Reduction Network, Dkt. No. SP-100 Sub 31, at 2, 2016 WL 1572367 *2 (N.C. Utils. Comm'n Apr. 15, 2016) (explaining that NC WARN intended to use the revenue stream from Faith Community Church to allow NC WARN "to install similar systems for additional consumers").

283. As stated in a debate over net metering policy, additional benefits associated with expanding distributed solar include: "excess electricity provided to the grid during peak periods, reduced congestion on the distribution grid, deferred or eliminated new utility investments in generation, transmission and distribution, improved system reliability, and reduced risk from fuel-cost volatility." See Charles J. Cicchetti & Jon Wellinghoff, *Solar Battle Lines: The fight over customer rooftops, grid funding, and net metering*, 153 No. 12 PUB. UTIL. FORT. 18, 19 (Dec. 2015).

grid were to fail, the public would suffer widespread economic hardship and detrimental effects on the standard of living. Distributed solar does not have that same vulnerability. On-site solar PV systems typically serve a single consumer.²⁸⁴ Therefore, the failure of such a system is far less significant than the type of system-wide failure possible with a traditional electric utility. In addition, as previously discussed, most solar PV system users remain connected to the electric grid. Consequently, should a solar PV system fail, the user continues to receive electricity through the grid, resulting in no loss of electricity service for the user.

Equitable considerations also weigh in favor of allowing PPAs. This is particularly the case in a state like North Carolina, which has a generous net metering policy but prevents those without the resources to purchase solar PV systems outright from taking advantage of that policy. The cost of solar PV systems has decreased significantly in the last five years.²⁸⁵ Even so, paying the upfront cost for a solar PV system is still beyond the reach of most Americans. This is particularly the case for racial minorities, whose median household income and overall wealth lags significantly behind Americans as a whole.²⁸⁶ In general, lower income households have not been able to take advantage of the reduced cost for solar PV systems. As explained in a working paper by George Washington University's GW Solar Institute, "The 49.1 million households that earn less than \$40,000 of income per year make up 40 percent of all US households but only account for less than five percent of solar installations."²⁸⁷

Some commentators have speculated about the possibility of an "electrical divide[,] in which the wealthy benefit from the cost savings of clean energy, while the less-well-off are left bearing the burden of an

284. There is a recent trend, however, for states to allow "community" solar PV systems. Under these arrangements, more than one consumer is served by the same local solar PV system. For a description of community solar, see *Community and Shared Solar*, U.S. DEP'T OF ENERGY, <https://energy.gov/eere/sunshot/community-and-shared-solar> [<https://perma.cc/YUK3-BMTV>].

285. The National Renewable Energy Laboratory *reports that the "median reported U.S. residential system had a capacity of 6.1kW in 2014 and cost approximately \$26,000—which is 40% less than the \$44,000 a similarly sized system would have cost in 2010."* FELDMAN & BOLINGER, *supra* note 17, at 18.

286. The national median household income was \$53,657 in 2014 for all Americans, but was lower for Latino (\$42,491) and Black (\$35,398) Americans. CARMEN DENAVAS-WALT & BERNADETTE D. PROCTOR, INCOME AND POVERTY IN THE UNITED STATES: 2014, U.S. CENSUS BUREAU 5, (Sept. 2015) www.census.gov/library/publications/2015/demo/p60-252.html [<https://perma.cc/5NXH-UZHY>]; see also Rakesh Kochhar & Richard Fry, *Wealth Inequality Has Widened Along Racial, Ethnic Lines Since End of Great Recession*, PEW RESEARCH CENTER (Dec. 12, 2014) <http://www.pewresearch.org/fact-tank/2014/12/12/racial-wealth-gaps-great-recession/> [<https://perma.cc/47J9-6LR5>].

287. James A. Mueller & Amit Ronen, *Bridging the Solar Income Gap 2* (GW Solar Institute, Working Paper, 2015) <http://solar.gwu.edu/research/bridging-solar-income-gap> [<https://perma.cc/YT78-G5L8>].

antiquated and less reliable traditional grid system.²⁸⁸ While allowing third-party financing, such as power purchase agreements, may not solve all of the equitable issues involved in affording solar PV systems,²⁸⁹ it does allow greater access to distributed solar generation for middle and low-income Americans, including members of minority groups.

The policy and equitable considerations discussed in this Part indicate that the regulation of PPAs lacks a sound theoretical foundation. Consequently, North Carolina law should permit the use of PPAs, which would allow for more ready access to distributed solar for the average North Carolinian. In Part VII, this Article prescribes possible judicial and statutory solutions to allow for the use of PPAs.

VII. PRESCRIPTIONS FOR SOLAR FINANCING IN NORTH CAROLINA

Given the lack of theoretical foundation for regulating solar financiers, the *NC WARN* decision establishes an unjustified barrier to the spread of distributed solar PV systems. That barrier may be overcome, however, through action by either the General Assembly or the North Carolina Supreme Court.

Legislative action could render the *NC WARN* decision moot by explicitly permitting third-party financing for solar PV systems in North Carolina. This was proposed during the 2015 session of the North Carolina General Assembly through House Bill 245, the “Energy Freedom Act.”²⁹⁰ The Energy Freedom Act would have amended the definition of a public utility to include a second exception (in addition to the exception for self-financing) for “a person who constructs or operates a renewable energy facility on the site of a customer’s property and sells the electricity produced by such facility to that customer, as provided by and subject to the limitations of G.S. 62-119.”²⁹¹ The referenced “limitations of G.S. 62-119” stated that the third-party owner of the renewable energy facility (*i.e.*, the financier under a PPA) would not be treated as a public utility

288. See Richard W. Caperton & Mari Hernandez, *The Electrical Divide: New Energy Technologies and Avoiding an Electric Service Gap*, CENTER FOR AMERICAN PROGRESS (July 15, 2013) <https://www.americanprogress.org/issues/green/reports/2013/07/15/69249/the-electrical-divide-new-energy-technologies-and-avoiding-an-electric-service-gap/> [https://perma.cc/FLV3-XGGS] (discussing the possibility of a “utility death spiral” if only the wealthy are able to afford solar PV systems).

289. See GRID ALTERNATIVES, VOTE SOLAR, & THE CENTER FOR SOCIAL INCLUSION, LOW INCOME SOLAR POLICY GUIDE, 8 (2016) http://www.lowincomesolar.org/wp-content/uploads/2017/03/Policy-Guide_3.7.17.pdf [https://perma.cc/64Y9-5ZJW] (discussing the disparate effect of credit scores on access to solar through third-party financing arrangements, including PPAs).

290. H.B. 245, Gen. Assemb. of N.C., Sess. 2015 (N.C. 2015).

291. *Id.*

so long as (i) the facility is sized to supply no more than one hundred twenty-five percent (125%) of the average annual consumption of electricity by the customer at that site and (ii) the third-party owner reports to the Utilities Commission the proposed construction of such a facility prior to the beginning of construction.²⁹²

The Energy Freedom Act was referred to a House committee but did not emerge, as it faced opposition from the state's electric utilities.²⁹³ Comparable legislation would be sure to face opposition if introduced again. One modification that could make the proposed legislation more palatable to its opponents, however, is a limitation not only on the *relative* size of any on-site "renewable energy facility," as the Energy Freedom Act included with the 125% limitation in G.S. 62-119,²⁹⁴ but also on the *absolute* size of the facility. In other words, the legislation could cap the size of any solar PV system to a specified number of kilowatts, if the system is owned by third-party financiers rather than by the host property owner. Such a cap would effectively limit the exception from the definition of "public utility" to residential and smaller commercial and non-profit customers. This would address the "cherry picking" concern identified in *Simpson, National Spinning, and NC WARN*.²⁹⁵ By capping the absolute size of the third-party financing exception in the definition of a public utility, the General Assembly would ensure that public utilities would not lose their largest customers or fail to make fair returns on infrastructure investments built to serve those customers.

Since the median size of residential solar PV systems in the United States is 6.1 kilowatts,²⁹⁶ a limit of 10 kilowatts would capture most

292. *Id.*

293. Telephone Interview with John Szoka, Representative, Gen. Assembly of N.C. (Jan. 3, 2017).

294. H.B. 245, Gen. Assemb. of N.C., Sess. 2015 (N.C. 2015).

295. This "cherry picking" concern has been identified in other contexts by courts and regulators confronted with the issue of whether particular activity should result in an entity being regulated as a public utility. *See, e.g.*, Nat. Gas Serv. Co. v. Serv-Yu Coop., 219 P.2d 324, 328 (1950) ("What appellant seeks to do is to pick out certain industrial consumers in select territory and serve them under special contracts to the exclusion of all others except such private or domestic consumers as may suit its convenience and advantage. There were other industrial consumers with whom the appellant refused or failed to agree and so did not serve them. If such consumers were served at all, it must necessarily be by a competitor. If a business so carried on may escape public regulation then there would seem to be no valid reason why appellant may not extend the service to double, triple, or many times the number now served without being amenable to regulative measures." (quoting Indus. Gas Co. v. Pub. Utils. Comm'n of Ohio, 21 N.E.2d 166, 168 (1939))). *But see* SW Gas Corp. v. Ariz. Corp. Comm'n, 818 P.2d 714, 722-23 (1991) (rejecting the incumbent natural gas utility's argument that El Paso Natural Gas Company should be regulated as a "public service corporation" because it constituted a competitive threat to the utility).

296. FELDMAN & BOLINGER, *supra* note 17, at 18.

residential and smaller commercial systems. Changing the proposed legislation to include such a cap could be accomplished by simply modifying the limitation in G.S. 62-119 to state that the third-party owner of the renewable energy facility would not be treated as a public utility “so long as (i) the facility is sized to supply no more than (A) one hundred twenty-five percent (125%) of the average annual consumption of electricity by the customer at that site or (B) ten (10) kilowatts, whichever is smaller.” By adding this limitation and addressing the “cherry picking” concern identified in previous Supreme Court of North Carolina and Utilities Commission decisions, the proposed legislation may be more acceptable to those who opposed the previously-introduced Energy Freedom Act.

If a legislative fix is not possible, the North Carolina Supreme Court should reconsider the “regulatory circumstances” that it introduced in *Simpson*. An opportunity for doing this may occur through the appeal of the Utilities Commission’s NC WARN decision.²⁹⁷ With the exception of the “effect of non-regulation or exemption from regulation of one or more persons engaged in the industry,”²⁹⁸ the regulatory circumstances from *Simpson* have generally not been applied expressly in the decisions of the Utilities Commission. As explained above, the Utilities Commission may have implicitly taken into account the “nature of the industry sought to be regulated,” since the Commission has generally provided greater protection for the electric industry,²⁹⁹ but the attention given to this regulatory circumstance prevents innovation in “essential” industries and precludes the type of case-by-case analysis endorsed by the court in *Simpson*.³⁰⁰

In light of the factors actually considered by the Utilities Commission in its previous decisions, statements by the court in *Simpson* supporting the case-by-case approach, and factors considered by courts in other jurisdictions when determining whether to regulate an individual or entity as a public utility, the North Carolina Supreme Court should replace the regulatory circumstances from *Simpson* with the following factors: (1) the nature of the proposed transaction(s); (2) the impact on the public of

297. An appeal of the Utilities Commission’s NC WARN decision is currently pending before the Court of Appeals of North Carolina. See Danielle Battaglia, *Court of Appeals Hears Arguments on Nonprofit that is Selling Solar Energy to Greensboro Church*, NEWS & RECORD (Feb. 23, 2017), http://www.greensboro.com/news/local_news/court-of-appeals-hears-arguments-on-nonprofit-that-is-selling/article_a05deb76-2d31-5082-ba3b-979b8e16c9af.html [https://perma.cc/TZ7W-XZ6Y]. The court will, of course, have to follow the binding precedent set by *Simpson*. However, if the case is ultimately appealed to the North Carolina Supreme Court, the court could reconsider the four regulatory factors it enumerated in *Simpson*.

298. *State ex rel. Utils. Comm’n v. Simpson*, 295 N.C. 519, 524, 246 S.E.2d 753, 756 (1978).

299. *See supra*, Section III.G.

300. *See SZ Enters., LLC v. Iowa Utils. Bd.*, 850 N.W.2d 441, 466 (Iowa 2014).

regulation or non-regulation; (3) the impact on the incumbent public utility of regulation or non-regulation; and (4) declarations of public policy by the General Assembly that may affect the decision of whether or not to regulate the proposed transaction(s).

The first factor, the nature of the proposed transaction, shifts the emphasis away from the nature of the industry (as called for by the first “regulatory circumstance” set forth in *Simpson*),³⁰¹ and instead focuses attention on the transaction itself. Several aspects of the proposed transaction may be relevant in determining whether the Utilities Commission should step in to regulate. For example, with respect to a power purchase agreement, this factor would consider whether the PPA is intended as a means for selling electricity or instead is meant to be a method for financing a solar PV system.³⁰²

This factor would also examine whether the proposed transaction is “bargained for” between the parties, thereby indicating that the parties have comparable bargaining power.³⁰³ If so, there is less need for regulation based on concerns about consumer protection. Analyzing the nature of the transaction would further allow for consideration of issues such as (i) whether the proposed transaction involves an indispensable commodity;³⁰⁴ (ii) whether the proposed transaction will result in waste or duplication of resources;³⁰⁵ and (iii) whether the consumer will continue to receive service from the incumbent utility.³⁰⁶ All of these issues are ones that have been considered by the North Carolina Utilities Commission, as well as other states’ regulators and courts, but are not part of the regulatory circumstances listed in *Simpson*.

The second proposed factor, the impact on the public of regulation or non-regulation of the proposed transaction, is intended to focus attention on the fact that regulation of public utilities is meant to serve the interest of

301. *Simpson*, 295 N.C. at 524, 246 S.E.2d at 756.

302. This aspect of the nature of the proposed transaction was discussed under the first *Serv-Yu* factor in *SZ Enterprises*. See *SZ Enters., LLC v. Iowa Utils. Bd.*, 850 N.W.2d 441, 466 (Iowa 2014).

303. The issue of whether the proposed transaction was “bargained for” between the parties was relevant to the North Carolina Utilities Commission in *Natural Power* and *FLS YK Farm*, discussed above. *See supra* Sections III.A, III.D

304. This is the first of the traditional justifications for regulation. *See supra* Part VI. It is also the fourth *Serv-Yu* factor. *See SZ Enters.*, 850 N.W.2d at 467 (discussing this factor in the context of a power purchase agreement).

305. This is the third traditional justification for regulation. *See supra* Part VI.

306. *Natural Power*, *National Spinning*, and *Progress Solar* each note that the host consumer would receive only a portion of its utilities needs from the proposed transactions and would therefore remain customers of the incumbent utility. *See supra* Sections III.A–III.C.

consumers, not to ensure maximum profit to the public utility.³⁰⁷ The North Carolina Utilities Commission did address the impact of the proposed transaction on the public in its *NC WARN* decision, but the Commission's analysis was based on theoretical speculation and empirical evidence about how PPAs affect electricity pricing from states that have permitted PPAs was not considered by the Commission in its assessment.

Further, while the Utilities Commission speculated in *NC WARN* about the potential cost increases for those consumers who do not enter into PPAs, the Commission ignored the very real economic benefit that would be enjoyed by lower-income consumers, like Faith Community Church, if they were allowed to enter into power purchase agreements. The only certain price effect from the *NC WARN* decision was that Faith Community Church will pay more for its electricity because the PPA was struck down.

The third factor—impact of regulation or non-regulation on the incumbent public utility—recognizes the “traditional regulatory bargain” between public utilities and the state: public utilities exchange the “benefit of monopoly franchised service territory for [the] obligation to provide adequate service at reasonable rates.”³⁰⁸ The competitive monopoly granted to public utilities is not absolute, however, as illustrated by the self-generation exception to the definition of “public utility” in North Carolina and the Utilities Commission’s allowance of the use of electricity generated by a third party to produce lighting in its *Progress Solar* decision.³⁰⁹ Other state regulators have been more explicit in recognizing that the competitive monopoly offered to public utilities does not preclude all sales by third parties.³¹⁰ As discussed above, the North Carolina Utilities Commission’s previous decisions seem to indicate that some—just not too much—competition is permitted vis-à-vis public utilities.

Consistent with its analysis of the impact on consumers, the Utilities Commission in *NC WARN* theorized that allowing PPAs in the State would

307. For a discussion of consumer protection as one of the three traditional justifications for regulation, *see supra* Part VI.

308. NORTH CAROLINA UTILITIES COMMISSION, NORTH CAROLINA’S PUBLIC UTILITY INFRASTRUCTURE & REGULATORY CLIMATE: PRESENTATION TO THE JOINT LEGISLATIVE COMMISSION ON ENERGY AND POLICY 3 (July, 2016), <http://www.ncleg.net/documents/sites/committees/BCCI-6576/2013-2014/3%20-Dec.%203,%202013/5%20-%20Finley%20NCUC%20Overview.pdf> [<https://perma.cc/NU6Q-SS4Y>].

309. Progress Solar Invs., LLC, Dkt. No. SP-100 Sub 24, at 1, 278 Pub. Util. Rep. 4th, 525, 526 (N.C. Utils. Comm’n Nov. 25, 2009).

310. *See, e.g.*, Declaratory Order Regarding Third-Party Arrangements for Renewable Energy Generation, 09-00217-UT (N.M. Pub. Regulation Comm’n Dec. 17, 2009) (Declaratory Order Partially Adopting and Modifying Recommended Decision) (stating that “The Public Utility Act does not protect a public utility from *all* competition, such as losing sales and revenues to a non-public utility entity engaged in retail sales.”).

result in “cherry picking,” which could result in less revenue for the utility and higher prices for consumers who did not enter into PPAs.³¹¹ As previously stated, this analysis failed to consider evidence of the impact of PPAs on public utilities in states that have allowed use of the agreements.³¹² As stated by the Iowa Supreme Court in *SZ Enterprises*:

Certainly, the case can be made that if Eagle Point is allowed to “cream skim” the most profitable customers, there may be impacts on the regulated utility. . . . There is nothing in the record of this administrative proceeding, however, to gauge the likelihood or degree of material impact, and there was no suggestion that the integrity of the grid or economic health of regulated providers has been adversely affected in states such as California, Nevada, Arizona, and Colorado, where third-party PPAs are not considered public utilities for purposes of regulation.³¹³

Thus, the impact on the public and the impact on public utilities are interrelated questions. The analysis of both should be based, whenever possible, on empirical information. With respect to power purchase agreements, that empirical information exists because several states have already permitted the use of PPAs.³¹⁴ Given the information currently available from those states, it does not appear that consumers or public utilities have been adversely affected by the use of PPAs.³¹⁵

The final consideration to determine whether to regulate a proposed transaction is whether the legislature has made any relevant public policy pronouncements. As stated in *Simpson*, the determination of whether to regulate must “in the final analysis” accomplish “the legislature’s purpose and comport[] with its public policy.”³¹⁶ Despite this statement in *Simpson*, the Utilities Commission’s analysis in *NC WARN* never mentioned the express public policies enacted in North Carolina favoring the development of renewable energy resources. Therefore, the Commission ignored the General Assembly’s stated public policy to use “*the entire spectrum of demand-side options*, including but not limited to conservation, load management and efficiency programs, as additional sources of energy supply and/or energy demand reductions.”³¹⁷ In addition, the statute establishing the Renewable Energy and Energy Efficiency Portfolio

311. N. C. Waste Awareness & Reduction Network, Dkt. No. SP-100 Sub 31, at 26, 2016 WL 1572367 *26 (N.C. Utils. Comm’n Apr. 15, 2016).

312. *See supra* text accompanying notes 183–86.

313. *SZ Enters., LLC v. Iowa Utils. Bd.*, 850 N.W.2d 441, 468 (Iowa 2014).

314. *See supra* Section IV.A.

315. *Id.*

316. *State ex rel. Utils. Comm’n v. Simpson*, 295 N.C. 519, 524, 246 S.E.2d 753, 756-57 (1978).

317. N.C. GEN. STAT. § 62-2(a)(3a) (2015) (emphasis added).

Standards provides that one of the purposes of the Standards is to “[e]ncourage private investment in renewable energy and energy efficiency.”³¹⁸ These statutory pronouncements may not directly answer the question of whether PPAs should be permitted in North Carolina, but they demonstrate a clear public policy favoring the development and expansion of renewable energy resources.

Ultimately, the North Carolina Supreme Court was correct in *Simpson* when it stated that flexibility is required when assessing whether to regulate a proposed transaction so as to “comport legislative purpose with the variable nature of modern technology.”³¹⁹ The factors set forth above allow for that type of flexibility. They also support the case-by-case approach espoused by the court in *Simpson* but hampered by *Simpson*’s focus on “the nature of the industry sought to be regulated.”³²⁰ By moving attention away from the nature of the industry and focusing instead on the nature of the transaction, the proposed standard allows for greater innovation within the electric industry and other regulated industries.

CONCLUSION

North Carolina is one of the few states that has expressly prohibited PPAs.³²¹ In its *NC WARN* decision, the Utilities Commission based its prohibition against power purchase agreements on a concern over the potential increased cost that could result to some consumers if PPAs were permitted in the state. Specifically, the Utilities Commission was concerned that if organizations like NC WARN were not treated as public utilities and regulated by the Commission, these organizations would “cherry pick” the most lucrative customers from the public utility, leaving the public utility with only the most costly customers to serve. Public utilities are required to provide adequate service to all those within their exclusive territory,³²² and cannot discriminate between lucrative and costly customers.³²³ Consequently, the Utilities Commission feared that allowing the more lucrative customers to reduce their reliance on the public utility by entering into PPAs for lower-cost, solar-generated electricity would ultimately leave

318. *Id.* § 62-2(a)(10)(c).

319. *Simpson*, at 524, 246 S.E.2d at 757.

320. *Id.* at 524, 246 S.E.2d at 756.

321. The only state to prohibit PPAs judicially is Florida. *See PW Ventures, Inc. v. Nichols*, 533 So.2d 281, 284 (Fla. 1988).

322. *See N.C. GEN. STAT. § 62-131(b)* (“Every public utility shall furnish adequate, efficient and reasonable service”); *see also supra* note 307 and accompanying text.

323. This “traditional bargain” applies in other states as well. *See, e.g., Trico Elec. Coop. v. Corp. Comm’n of Ariz.*, 339 P.2d 1046, 1054 (1959) (“A public utility is a person, corporation or association engaged in a business affected with a public interest and therefore must serve everyone in the area where it operates who applies for service. It cannot refuse such service.”).

the public utility serving fewer and more costly customers. This, in turn, would result in higher prices for those consumers continuing to receive their electricity exclusively from the public utility.

Ironically, given its concern about the higher cost of electricity from permitting PPAs, the Utilities Commission's decision actually prevents consumers like Faith Community Church, which are not able to self-finance solar PV systems, from receiving the lower-cost electricity that solar PV systems could provide. The prohibition against PPAs also fails to account for the fact that other states have already permitted this type of arrangement without the adverse consequences to the cost of electricity that served as the basis of the Utilities Commission's decision.³²⁴ Experience shows that states that have expressly allowed PPAs have generally seen changes in the cost of electricity consistent with the rest of the nation. Thus, the decision to prohibit PPAs precludes lower-income consumers from accessing the benefit of lower-cost solar energy that they would otherwise enjoy and serves to protect against cost increases that appear unlikely to actually occur. If North Carolina hopes to move towards more equitable access to renewable energy resources, either the General Assembly or the North Carolina Supreme Court should act to permit third-party financing for distributed solar PV systems.

324. DATABASE OF STATE INCENTIVES FOR RENEWABLE ENERGY & EFFICIENCY, 3RD PARTY SOLAR PV POWER PURCHASE AGREEMENT (PPA) (Apr. 2017), http://ncsolarcen-prod.s3.amazonaws.com/wp-content/uploads/2017/04/DSIRE_3rd-Party-PPA_April_2017.pdf [<https://perma.cc/V5KH-5S3N>] (showing states that have permitted the use of PPAs)